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# University Avenue/I-95/I-93 Regional Traffic Study

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A report produced by the

Central Transportation Planning Staff for the

Massachusetts Highway Department

# University Avenue/I-95/I-93 Regional Traffic Study

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July 1999

The Boston Metropolitan Planning Organization Region

Study area

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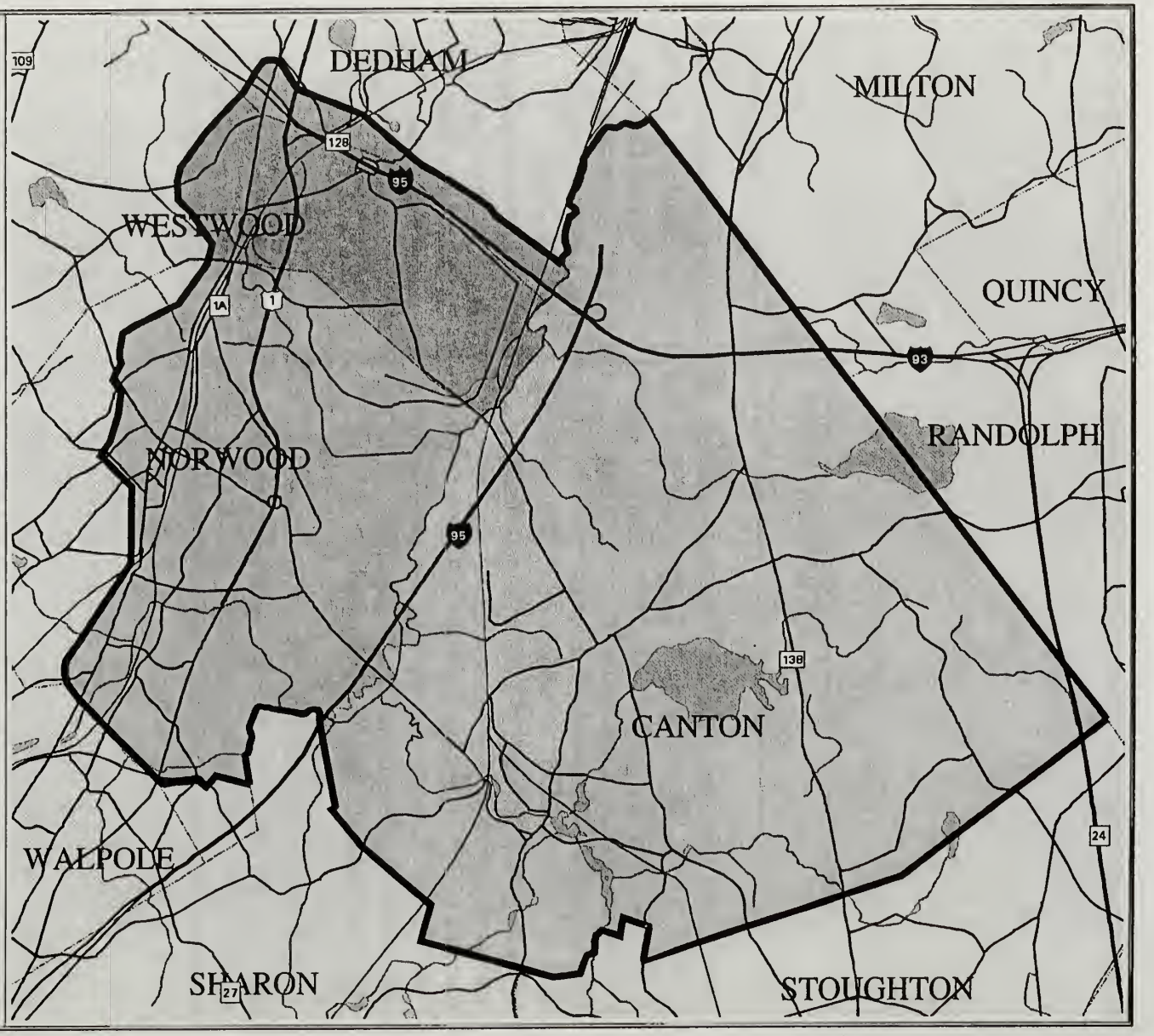
# INTRODUCTION

In order that mutual traffic concerns may be addressed, the Three Rivers Interlocal Council (TRIC), the communities of Canton, Dedham, Norwood, and Westwood, and the Neponset Valley Chamber of Commerce (NVCC) requested in 1996 that MassHighway, through the Central Transportation Planning Staff (CTPS), perform a traffic study for the general vicinity of University Avenue and the I-95/I-93 interchange. This study has recently been concluded. It has identified traffic problems on regional and local roadways, analyzed numerous improvement alternatives, and recommended a package of roadway improvements which would help to mitigate the traffic problems in the study area (see Figure 1). This preferred alternative has been accepted by the project Task Force. Although much work remains in terms of design, additional environmental assessment of improvements, permitting, and eventual construction, the end of the conceptual planning phase has been reached.

This report documents the various elements and steps of the planning study, presenting analysis methods as well as results. The body of the report summarizes the analysis methods and some key results, while the bulk of data and results are provided in the appendices, which principally consist of technical memoranda produced during the course of the study.

FIGURE 1

Study Area




Study area boundary

Interstate
Other functionally classified roads
Local roads
Active rail

CTPS

## PARTICIPANTS IN THE STUDY

The University Avenue/I-95/I-93 Regional Traffic Study has been conducted in large measure parallel to the MBTA/Amtrak study on the redevelopment of Route 128 Station. In fact, that study's Task Force agreed early on to serve also as the Task Force for this study.

There was close coordination throughout the project between CTPS, MassHighway, the MBTA, and Amtrak with respect to the sharing of information such as traffic counts, survey results, and traffic forecasts. The CTPS forecast volumes were used as direct input to the intersection LOS analyses for the Route 128 Station draft EIR, performed by Frederic R. Harris and Earth Tech.

Task Force members actively involved in the monthly meetings and instrumental throughout all the steps of the traffic study process included (in addition to the six just mentioned):

TRIC
Dedham town officials
Westwood town officials
Executive Office of Environmental Affairs/
Massachusetts Environmental
Protection Agency
State Senator Marian Walsh
Governor's Council
Dedham Conservation Commission
Cabot Cabot & Forbes
Perini Corporation
Bruce Campbell & Associates
Sam Park Associates
Metropolitan District Commission
Planning Office
citizens from the four local communities
Canton town officials
Norwood town officials
Neponset Valley Chamber of Commerce
Friends of Fowl Meadow/
Citizens for Ponkapoag
Neponset River Watershed Association
State Representative Maryanne Lewis
Dedham-Westwood Water District
Joint Regional Transportation
Committee
Vanesse Hangen Brustlin, Inc.
Sasaki Associates
CJH Environmental
Metropolitan Area Planning Council
General Motors

The Task Force met on the following dates (the first four meetings were held at Westwood Town Hall, the remainder at the Neponset Valley Chamber of Commerce in Norwood):

*1996* 18 December

*1997* 28 January, 25 February, 25 March, 15 April, 20 May, 16 September, 21 October, 2 December, 16 December

*1998* 10 March, 7 April, 12 May, 30 June

The study was also discussed at the following meetings, which were also attended by members of the public:

*1997* 19 February, TRIC monthly meeting, Neponset Valley Chamber of Commerce, Norwood
15 April, consultation meeting on Route 128 Station ENF, Westwood Town Hall

*1998* 13 February, consultation meeting, MassHighway–BTP&D offices
27 May, public meeting on this study, Westwood High School
24 June, public meeting on this study, Kennedy School, Canton

## TRAFFIC PROBLEM IDENTIFICATION

The area in the vicinity of the I-95/I-93 (Route 128) interchange in Canton has for many years been plagued with high levels of traffic congestion and substandard traffic operations. Because the interchange is part of the inner circumferential highway around Boston, the area experiences traffic problems most markedly during the weekday morning and afternoon peak periods. However, problems also frequently occur during off-peak times, such as the middle of the day, and on weekends, due to traffic incidents. The most prominent specific traffic problems within the study area include:

- Chronic congestion and weaving problems on Route 128 southbound in the PM peak hour between Route 1 and the I-95 southbound off-ramp. Average PM peak hour speeds were recorded at 17 miles per hour on this segment.[1]

- Recurring safety problems on the I-95 northbound–to–Route 128 northbound ramp. Dubbed "Dead Man's Curve," this ramp has been the site of many truck rollovers over the years.

- Congestion at the University Avenue/Blue Hill Drive intersection in Westwood during the AM and PM peak hours. Traffic to and from the University Avenue Business Park and the MBTA/Amtrak rail station exceeds intersection capacity, causing long queues that sometimes extend onto the Route 128 southbound ramps to and from Blue Hill Drive.

- Commuter and truck traffic from the south having to leave I-95 and then travel through residential neighborhoods via Neponset Street in Norwood and Canton and via Chapman, Dedham, and Washington streets in Canton in order to reach a number of common destinations.

- Chronic congestion on Route 138 at the intersections with Royall, Greenlodge, Washington, and Randolph streets in Canton.

- High peak hour congestion levels on Route 1 at the Everett Street/University

[1]Central Transportation Planning Staff and CARAVAN for Commuters, Inc., *Speeds and Travel Times on Limited-Access Highways in the Boston Metropolitan Region: 1994–1995*, March 1996, pp.124 and 130.

Avenue intersection in Norwood.

These and other congestion-related and operational problems on the highways and at local intersections constituted the focus of the study. Additional information regarding the traffic problems may be found in Appendix A-4. The following sections summarize the various steps which were followed in developing the eventual mitigation plan, or preferred alternative.

# DATA COLLECTION

The primary tool used in the study to analyze existing traffic conditions and conditions in future years, without and with proposed roadway improvements, were THE[2] traffic simulation models. AM and PM peak hour models were assembled for the base year (1995), 2005, and 2020 (the peak hours were defined as 7:00–8:00 AM and 5:00–6:00 PM).

The basic inputs for the traffic simulation models are divided into three categories:

- Traffic counts
- Socioeconomic data
- Network data

These model inputs are described in greater detail below.

## Traffic Counts

Before traffic simulation models are used, they must be calibrated, that is, adjusted to achieve accurate performance. This is done by using them to "predict" present-day traffic volumes and comparing the modelling results with actual traffic counts. The traffic counts used should be as recent as possible, preferably no more than two years old. For the present study, 24-hour automatic traffic recorder (ATR) counts and AM and PM peak period manual turning movement counts (MTMCs) performed during 1995–1997 were used. The sources for these counts, many of which were conducted especially for this study, were MassHighway, CTPS, Earth Tech, Vanasse Hangen Brustlin (VHB), local communities, and private vendors.

## Socioeconomic Data

A second category of inputs to THE traffic-simulation models comprises data on number of households, retail and nonretail employment, and household income in the study area. The data need to be at the level of traffic analysis zones (TAZs, also called traffic zones), which are

[2]The Highway Emulator, Release 4.0, by Edward J. Bromage, CTPS, 1991.

areas where trip making characteristics are similar. For example, high income households make more automobile trips than low income households, and retail centers attract more automobile trips than do manufacturing centers. So, when defining traffic zones, similar land use areas should be consolidated into traffic zones.[3]

In the present study, these data were collected for the base year of 1995 (the most recent year for which sufficient data were available) and were estimated for 2005 and 2020 in consultation with the local planning boards and community developers. Data were obtained from the 1990 U.S. Census, the Metropolitan Area Planning Council (MAPC), local governments and businesses, and other private sources. Corroboration of data from local business and planning officials was obtained wherever possible (see Appendices A-1 and A-2). The data often existed just at the town level, sometimes by census tract, and had to be disaggregated to accurately represent the tripmaking characteristics of each of the 45 internal study area TAZs.

**Network Data**

The third input to a THE model is an inventory of all the roadways in the study area. Roadway free-flow speeds, number of lanes, distances between intersections, and other physical characteristics are included, together with such variables as whether a roadway is one-way or two-way, whether turn prohibitors exist at certain locations, and the impacts of traffic signals or stop signs. CTPS staff did all the necessary field work to create an accurate roadway network for this study's models.

[3]Edward J. Bromage, "The Highway Emulator Model, Release 4.0," model documentation, 30 April, 1991, p. 29.

# IDENTIFICATION OF PROBLEMS AND POTENTIAL IMPROVEMENT MEASURES

CTPS was already familiar with some of the study area's traffic problems. Information was solicited from the Task Force regarding other intersections and roadways with poor traffic operations. The problem locations were investigated, level-of-service (LOS) analyses for the AM and PM peak hours were performed, and the results were reported to the Task Force.

The Task Force members were also asked for input on potential remedies to the traffic problems, to supplement CTPS's analyses. The local community representatives, having lived with many of the recognized problems for quite some time, suggested many improvement alternatives. CTPS summarized all of the known traffic problems and the potential remedies in a technical memorandum (Appendix A-4) which was distributed to the Task Force. As will be explained, the improvement measures were tested in groups and evaluated, and a preferred alternative was then developed that incorporated the favorably assessed measures.

# TRAFFIC FORECASTS FOR SCREENING THE POTENTIAL IMPROVEMENT MEASURES

Twenty-two potential roadway improvements were tested via the future year traffic simulation models in order to estimate and evaluate their traffic impacts on the study area roadways. For the purpose of this testing, the improvement measures, ranging from adding slip ramps between Dedham Street and I-95, to rebuilding the I-95 northbound ramp to Route 128 northbound as a fly-over ramp, to the creation of a new east-west road between Pleasant Street and Route 138, were initially grouped in various combinations into nine "packages." Of these packages, five included a rebuilt Greenlodge Street bridge over the MBTA/Amtrak rail line, while four did not. A bit later in the process, modified versions of some of the improvement measures were combined with unmodified measures to form yet another five packages for testing via the traffic models. All the packages, with their composite improvements, are described in Appendices B-1 and B-2. In all of this study's future year forecasting, two previously committed roadway improvements were assumed: a fourth general-purpose travel lane on Route 128 northbound and southbound, and capacity improvements at University Avenue at Blue Hill Drive.

AM and PM peak hour traffic forecasts for each package were produced for the year 2020 to serve as a screening tool in assessing the improvement measures under consideration. Producing forecasts for the 2005 AM and PM peak hours was reserved for the "preferred alternative" that would emerge later in the evaluation process.

The 2020 forecasts were summarized and presented to the Task Force in technical memoranda that also provided, for comparison, base year (1995) volumes and 2020 no-build volumes. All of the 2020 forecasts (build and no-build) were done both *without* and *with* the new Route 128 Station parking garage in place. These memoranda, with volumes and analyses for each individual improvement measure, are contained in Appendices B-3, B-4, and B-5. Appendix B-6 describes some steps taken in the model calibration process.

## DEVELOPMENT OF A PREFERRED ALTERNATIVE

Once all of the roadway improvement measures under consideration had been incorporated into one or more packages and tested with respect to traffic impacts, the measures were rated according to evaluation criteria approved by the Task Force (see Appendix A-3), for the purpose of determining which measures should be included in the preferred alternative. MassHighway–BTP&D and CTPS staff, with input from MassHighway Highway Design staff, rated each measure for each of seven criteria:

- Traffic congestion
- Overall safety
- Access, circulation
- Neighborhood impact
- Environmental impact
- Economic development
- Estimated cost

A rating of "+", "0", "-", or "FAIL" was assigned to each measure, depending on the evaluators' determination of its merits. The evaluation process included empirical analysis, such as that which was based on the traffic forecasts and the estimated costs, and also involved less quantifiable assessment, such as for environmental impact and economic development. Details on the evaluation results may be found in Appendices C-1 and C-2.

Table 1 lists the measures which, as a result of the evaluation process, were included in the preferred alternative. It also lists other transportation improvements already planned and approved for the study area and provides cost estimates. Figure 2 shows the locations of the improvements.

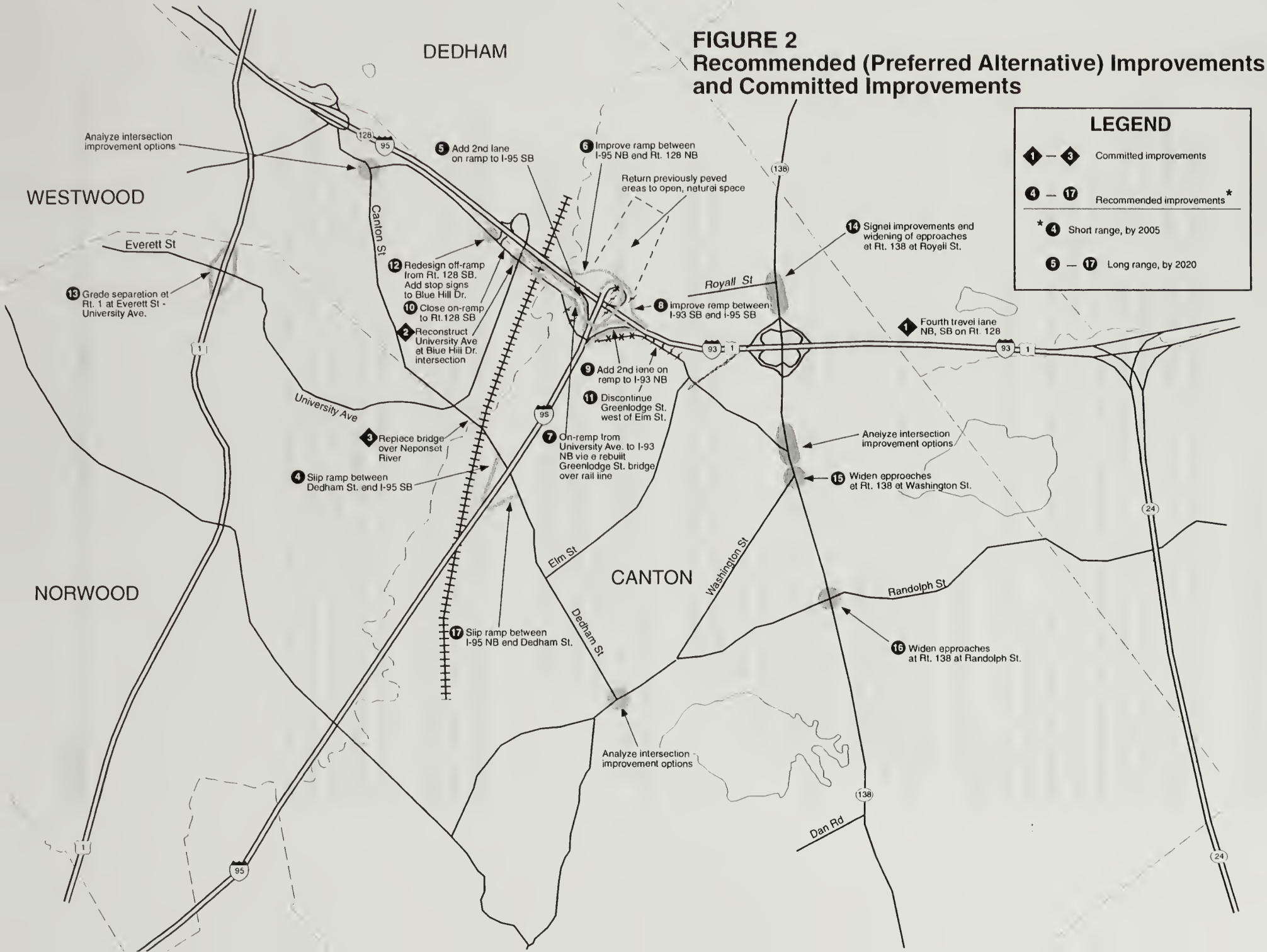
Once the preferred alternative had been determined, additional analysis was performed with respect to engineering feasibility. MassHighway Highway Design staff were consulted in order to obtain more information on geometric design issues such as ramp elevation, alignment, width of roadways, and bridge capacity. At the end of this process, the information was presented to the Task Force, as well as at public meetings in the study area communities.

## TABLE 1
## Recommended (Preferred-Alternative) Improvements and Committed Improvements, with Cost Estimates

| Committed Improvements | | Estimated Cost | Schedule |
|---|---|---|---|
| 1. Construct Route 128 Transportation Imp. Project (MassHighway) (1) | | $96,500,000 | Year 2003-2004 |
| 2. Reconstruct University Ave. (MBTA) | | $4,000,000 | 12-18 months |
| 3. Replace bridge at Dedham St. over Neponset River (MassHighway) | | $950,000 | Fall 1999 compl. |
| | *Subtotal:* | ***$101,450,000*** | |
| **Recommended Short-Range Improvements** | | | |
| 4. Provide new ramp from Dedham St. to I-95 southbound; provide barriers to prevent left turns onto ramp from Dedham St. | | $500,000 | 1-2 years (2) |
| | *Subtotal:* | ***$500,000*** | |
| **Recommended Long-Range Improvements** | | | |
| **Route 128/I-95/I-93 Interchange:** | | | |
| 5. Widen connection from Route 128 southbound to I-95 southbound to two lanes (3) | | $2,000,000 | 4-6 years |
| 6. Provide high-speed connection between I-95 northbound and Route 128 northbound and remove inner loop ramp | | $15,000,000 | 4-6 years |
| 7. Provide new ramp from University Ave. to I-93 northbound via new Greenlodge St. bridge (3) | | $5,000,000 | 4-6 years |
| 8. Realign and improve connection between I-93 southbound and I-95 southbound | | $5,000,000 | 4-6 years |
| 9. Widen connection from I-95 northbound to I-93 northbound to two lanes | | $500,000 | |
| | *Subtotal:* | ***$27,500,000*** | |
| **Other:** | | | |
| 10. Close existing Blue Hill Dr.-to-Route 128 southbound on-ramp | | n/a | After #4 and #7 |
| 11. Discontinue Greenlodge St. between ramp and Elm St. | | n/a | After #7 |
| 12. Realign Route 128 off-ramp southbound to Blue Hill Dr.; modify intersection control | | $200,000 | 4-6 years |
| 13. Grade-separate Route 1 at Everett St. | | $9,000,000 | 3-5 years |
| 14. Reconstruct intersection of Route 138 at Royall St. (Reebok-funded design) (4) | | $1,500,000 | 2-3 years |
| 15. Widen Route 138 north and south of Washington St. (Reebok-funded design) (4) | | $300,000 | 2-3 years |
| 16. Improve intersection of Route 138 at Randolph St. (Reebok-funded design) (4) | | $300,000 | 2-3 years |
| 17. Provide new ramp from I-95 northbound to Dedham St.; widen Dedham St. over I-95; add signal if necessary; channelize/improve Dedham St. as needed (3) | | $3,000,000 | 4-6 years |
| | *Subtotal:* | ***$14,300,000*** | |
| ***Total Cost of All Improvements (5)*** | | ***$143,750,000*** | |

(1) Design costs are not included in this cost estimate.
(2) This time frame assumes that no EIR is required; if an EIR is required, then the project schedule will be 2-3 years.
(3) Elements 5, 7, and 17 will be prioritized in order to shorten the expected implementation schedule to the extent feasible.
(4) These projects are part of a previous commitment related to the Reebok development.
(5) Total cost does not include design costs and right-of-way costs.

# FIGURE 2
# Recommended (Preferred Alternative) Improvements and Committed Improvements


DEDHAM
WESTWOOD
NORWOOD
CANTON
LEGEND
1 — 3 Committed improvements
4 — 17 Recommended improvements*
* 4 Short range, by 2005
5 — 17 Long range, by 2020
Analyze intersection improvement options
5 Add 2nd lane on ramp to I-95 SB
6 Improve ramp between I-95 NB end Rt. 128 NB
Return previously peved areas to open, naturei space
14 Signei improvements end widening of approaches et Rt. 138 et Royeli St.
Everett St
Canton St
12 Redesign off-ramp from Rt. 128 SB. Add stop signs to Blue Hill Dr.
10 Close on-ramp to Rt.128 SB
2 Reconstruct University Ave et Blue Hill Dr. intersection
13 Grede separetion et Rt. 1 at Everett St - University Ave.
Royall St
8 improve remp between I-93 SB and I-95 SB
1 Fourth trevei iane NB, SB on Rt. 128
9 Add 2nd iene on remp to I-93 NB
11 Discontinue Greenlodge St. west of Eim St.
University Ave
3 Repiace bridge over Neponset River
7 On-remp trom University Ave. to I-93 NB vie e rebuilt Greenlodge St. bridge over rail iine
Aneiyze intersection improvement options
4 Siip ramp between Dedham St. end I-95 SB
15 Widen epproeches et Rt. 138 et Washington St.
Eim St
Washington St
Randolph St
17 Siip ramp between I-95 NB end Dedham St.
Dedham St
16 Widen epproaches at Rt. 138 at Randolph St.
Analyze intersection improvement options
Dan Rd

The final step in the modelling process was to produce traffic forecasts for the preferred alternative. Forecasts for 2005 were produced reflecting implementation of the one component of the alternative (a slip ramp from Dedham Street to I-95 southbound) for which implementation by that year is considered highly feasible. Forecasts for 2020 were produced for the preferred alternative in its entirety. These forecasts were summarized for the Task Force along with, for purposes of comparison, base year volumes and future year no-build forecasts. These data (provided in Appendix C-3) consist of the following:

*Base year*

- 1995 balanced counts

*No-build*

- 2005 forecast volumes
- 2020 forecast volumes

*Short-range improvement*

- 2005 forecast volumes with implementation of Dedham Street–to–I-95 southbound slip ramp only
  (Two sets of volumes:
  - If Dedham Street westbound left turns to I-95 **are** permitted
  - If Dedham Street westbound left turns to I-95 **are not** permitted)

*Long-range improvement*

- 2020 forecast volumes with implementation of entire preferred alternative
  (Two sets of volumes:
  - If Dedham Street westbound left turns to I-95 **are** permitted
  - If Dedham Street westbound left turns to I-95 **are not** permitted)

Throughout all future year scenarios, two roadway improvements had been assumed: a fourth general purpose travel lane on Route 128 northbound and southbound, and capacity improvements at University Avenue at Blue Hill Drive.

It should finally be noted that at least one proposed roadway improvement which was eliminated in the original ranking process may be analyzed further by MassHighway. A local connection across Route 128 between Royall Street and the Greenlodge Street/station area, may receive additional scrutiny once the four I-95/I-93 interchange ramps and the University Avenue-to-I-93 northbound on-ramp have been designed.

## TRAFFIC MANAGEMENT FOR CANTON STREET, WESTWOOD

Canton Street residents in Westwood expressed concern that the proposed ramp from Dedham Street to I-95 southbound could lead to "cut-through" traffic on Canton Street consisting of Route 128 commuters traveling to employment sites along University Avenue in Westwood and on Dedham Street in Canton. In response to this concern, CTPS performed a review of potential traffic-management techniques which may be suitable for Canton Street. The findings of this effort are provided in Appendix D.

## APPENDIX A

## Data collection

A-1 Soliciting Input on and Corroboration of Zonal Socioeconomic Data in Canton, Dedham, Norwood, Westwood (technical memorandum)

A-2 Confirmation of Future Year Employment and Residential Developments (sample of letter sent to all of the study-area towns)

A-3 Evaluation Criteria to be Applied to Proposed Improvement Alternatives: Solicitation of Future Year Socioeconomic Data by Community (technical memorandum)

A-4 Summary of Study Area Traffic Problems and of Improvement Alternatives Received from Task Force Representatives (technical memorandum)

# [APPENDIX A-1]

## MEMORANDUM

**TO:** **University Avenue / I-95 / Route 128 Station Study Task Force** **16 January, 1997**

**FROM:** **Robert Sievert**

**RE:** **Soliciting Input on and Corroboration of Zonal Socioeconomic Data in Canton, Dedham, Norwood, Westwood**

The Central Transportation Planning Staff (CTPS) has recently begun a traffic study to assess problems and to test traffic circulation improvement alternatives in the University Avenue / I-95 / Route 128 Station area. This study was requested by the communities of Canton, Dedham, and Westwood, along with the Neponset Valley Chamber of Commerce and Three Rivers Interlocal Council (TRIC).

In order to test future improvement options, the initial step of the study involves the construction of a traffic simulation model for the Base Year (1995). Much data has been collected as input to the traffic model, and include AM and PM peak hour as well as 24-hour traffic counts; an inventory of the study area roadways (free-flow speeds, hourly capacities, number of lanes); and, socioeconomic data (including population, number of households, and retail and non-retail employment levels). The study area has been divided into traffic analysis zones (TAZs), and all socioeconomic data has been allocated to the 45 internal study area zones. There are also 28 external traffic zones, but these receive different data allocation from the internal zones.

*This memorandum seeks the input and corroboration by the Task Force community representatives with respect to the general distribution and magnitude of the allocated Base Year socioeconomic data into the 45 internal zones.* This request by CTPS for help in the modelling process was first solicited at the Route 128 Station Task Force meeting in Westwood Town Hall on 18 December, 1996. Note that CTPS has already reviewed some of the zonal employment data with the Neponset Valley Chamber of Commerce.

Attached are traffic zone maps, by study area community, as well as tables showing estimated Base Year levels of retail and non-retail employment, and of population and number of households, as distributed into the 45 internal TAZs. There are also tables showing (a) a list of employment locations which were in the study area in 1990, and (b) a list of firms which were apparently present in 1995-1996. It would aid CTPS' efforts, and enhance the validity of the traffic model, if this input data were reviewed by the appropriate town planner, engineer, or

community development specialist in each community, and comments and corrections be brought to CTPS' attention.

The next Task Force meeting is scheduled for Tuesday, 28 January, at 3:00 PM, at the Westwood Town Hall, and the hope is that comments and corrections regarding the enclosed data could be transmitted to CTPS staff at that time, or as soon as possible thereafter. There should be sufficient time for questions and discussion pertaining to this data collection effort at the meeting, as well.

CTPS appreciates the help and cooperation of the Task Force representatives. Should there be any questions prior to the meeting, these can be forwarded to Robert Sievert, Project Manager, at (617) 973-7138.

RES/res

Attachments

cc: Ken Miller, BTP&D, MHD
Dan Fortier, MAPC
Steve Silveira, MBTA

## ATTACHMENTS

A *(For use as reference with the tables in B and C below)*

- A-1 Traffic zone map, Study Area
- A-2 Traffic zone map, Canton
- A-3 Traffic zone map, Norwood
- A-4 Traffic zone map, Westwood

B *(Please review for reasonableness)*

- B-1 Traffic Analysis Zone estimates of Base Year Retail and Non-retail Employment
- B-2 Traffic Analysis Zone estimates of Base Year Population, and Number of Households

C *(Please review: do these firms still exist at these locations, or elsewhere in the study area? What are the estimated 1995 or 1996 employment levels for each firm?)*

- C-1 Known employment locations in 1995 or 1996
- C-2 Known employment locations in 1990

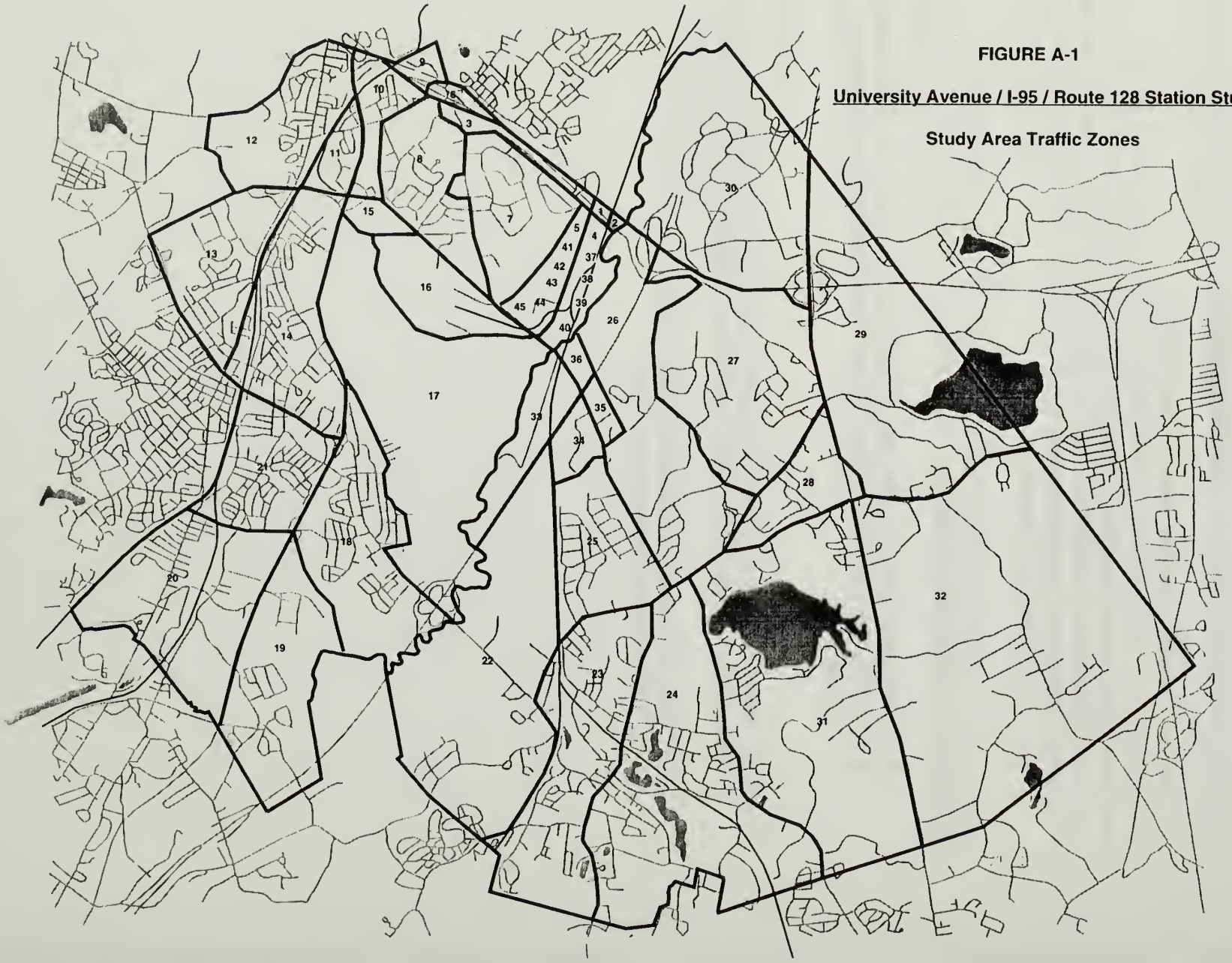



**FIGURE A-1**

**University Avenue / I-95 / Route 128 Station Study**

**Study Area Traffic Zones**

**FIGURE A-2**

# Canton Zones

**FIGURE A-3**

Norwood Zones

FIGURE A-4

Westwood Zones

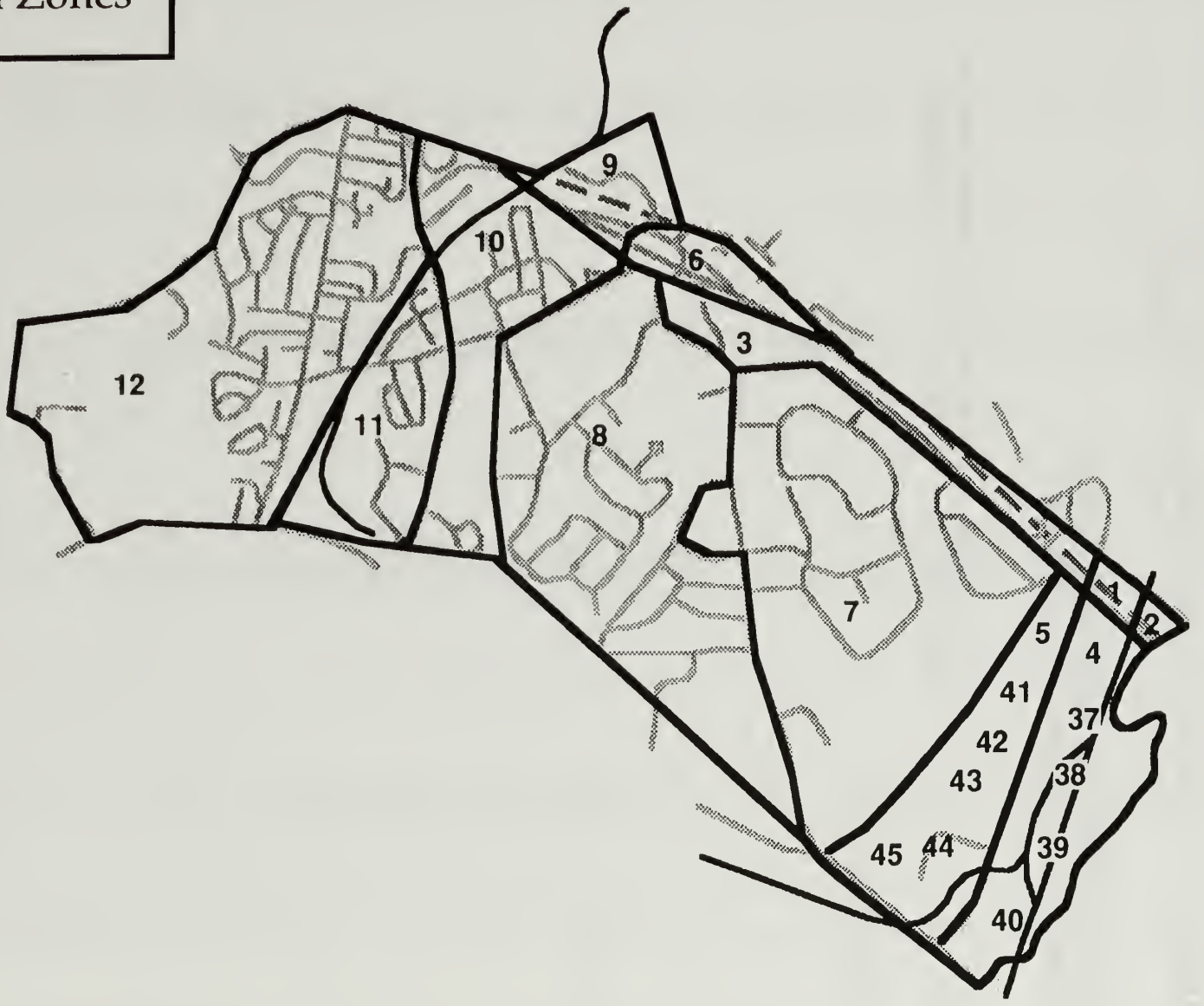


**TABLE B-1** *(Please review for reasonableness)*

**UNIVERSITY AVENUE / I-95 / ROUTE 128 STATION STUDY**
**Estimated 1995 / 1996 Employment by Traffic Zone**

| Town | Traffic Analysis Zone (TAZ) | Estimated 1995 / 1996 Employment Retail | Non-Retail |
|---|---|---|---|
| Dedham, or | 1 | 0 | 0 |
| Dedham / Westwood | 2 | 0 | 0 |
| | 3 | 146 | 6 |
| | 9 | 238 | 315 |
| | | 384 | 321 |
| Westwood | 4 | 0 | 300 |
| | 5 | 145 | 0 |
| | 6 | 0 | 0 |
| | 7 | 140 | 61 |
| | 8 | 41 | 35 |
| | 10 | 1388 | 234 |
| | 11 | 480 | 194 |
| | 12 | 571 | 35 |
| | 37 | 312 | 9 |
| | 38 | 138 | 28 |
| | 39 | 0 | 200 |
| | 40 | 165 | 3 |
| | 41 | 75 | 800 |
| | 42 | 170 | 220 |
| | 43 | 126 | 0 |
| | 44 | 361 | 0 |
| | 45 | 315 | 20 |
| | | 4427 | 2139 |

(Robert Sievert, 970115, EmpData.xls)

B-1, cont.

| Town | Traffic Analysis Zone (TAZ) | Estimated 1995 / 1996 Employment Retail | Non-Retail |
|---|---|---|---|
| Norwood | 13 | 160 | 1841 |
| | 14 | 1276 | 398 |
| | 15 | 315 | 1016 |
| | 16 | 136 | 1279 |
| | 17 | 536 | 16 |
| | 18 | 774 | 125 |
| | 19 | 1080 | 892 |
| | 20 | 2113 | 2224 |
| | 21 | 774 | 365 |
| | | 7164 | 8156 |
| Canton | 22 | 348 | 392 |
| | 23 | 994 | 691 |
| | 24 | 1651 | 976 |
| | 25 | 82 | 288 |
| | 26 | 109 | 0 |
| | 27 | 216 | 47 |
| | 28 | 46 | 0 |
| | 29 | 35 | 5 |
| | 30 | 729 | 590 |
| | 31 | 2754 | 666 |
| | 32 | 1699 | 1123 |
| | 33 | 10 | 46 |
| | 34 | 854 | 943 |
| | 35 | 40 | 70 |
| | 36 | 306 | 0 |
| | | 9873 | 5837 |
| | | 21848 | 16453 |

## TABLE B-2 *(Please review for reasonableness for 1995 / 1996)*

### *University Avenue Traffic Study*

Population and Households

| Town | Zone | Total Population | Pop in Households | Total Households |
|---|---|---|---|---|
| Canton | 22 | 1104 | 1104 | 430 |
| | 23 | 3801 | 3641 | 1380 |
| | 24 | 4864 | 4864 | 1907 |
| | 25 | 1202 | 1202 | 387 |
| | 26 | 610 | 610 | 184 |
| | 27 | 1546 | 1546 | 491 |
| | 28 | 823 | 823 | 290 |
| | 29 | 257 | 257 | 98 |
| | 30 | 126 | 126 | 45 |
| | 31 | 2341 | 2215 | 729 |
| | 32 | 1570 | 1570 | 581 |
| | 33 | 0 | 0 | 0 |
| | 34 | 174 | 174 | 54 |
| | 35 | 113 | 113 | 30 |
| | 36 | 0 | 0 | 0 |
| Canton Total | | 18531 | 18245 | 6606 |
| Dedham | 1 | 0 | 0 | 0 |
| | 2 | 0 | 0 | 0 |
| | 3 | 0 | 0 | 0 |
| | 9 | 220 | 80 | 36 |
| Dedham Total | | 220 | 80 | 36 |
| Norwood | 13 | 1660 | 1635 | 577 |
| | 14 | 4639 | 4268 | 1825 |
| | 15 | 2 | 2 | 1 |
| | 16 | 8 | 8 | 2 |
| | 17 | 254 | 254 | 82 |
| | 18 | 2561 | 2561 | 863 |
| | 19 | 1439 | 1439 | 552 |
| | 20 | 2430 | 2430 | 997 |
| | 21 | 3027 | 3027 | 1258 |
| Norwood Total | | 16020 | 15624 | 6157 |
| Westwood | 1 | 0 | 0 | 0 |
| | 2 | 0 | 0 | 0 |
| | 3 | 42 | 42 | 15 |
| | 4 | 0 | 0 | 0 |
| | 5 | 0 | 0 | 0 |
| | 6 | 50 | 50 | 21 |
| | 7 | 961 | 961 | 282 |
| | 8 | 1143 | 1143 | 350 |
| | 9 | 0 | 0 | 0 |
| | 10 | 245 | 245 | 94 |
| | 11 | 342 | 342 | 123 |
| | 12 | 1730 | 1730 | 641 |
| | 37 | 0 | 0 | 0 |
| | 38 | 0 | 0 | 0 |
| | 39 | 0 | 0 | 0 |
| | 40 | 0 | 0 | 0 |
| | 41 | 0 | 0 | 0 |
| | 42 | 0 | 0 | 0 |
| | 43 | 0 | 0 | 0 |
| | 44 | 0 | 0 | 0 |
| | 45 | 0 | 0 | 0 |
| Westwood Total | | 4513 | 4513 | 1526 |
| Study Area Total | | 39284 | 38462 | 14325 |

## TABLE C-1

*(Please review: Do these firms still exist at these locations, or elsewhere in the study area? What are the estimated 1995 or 1996 employment levels for each firm?)*

**UNIVERSITY AVENUE / I-95 / ROUTE 128 STATION STUDY:**
**Location of Known Businesses in the University Avenue Industrial Park (and in disaggregated zones nearby), 1995 or 1996**

| Address (WESTWOOD) | Traffic Zone | Firm(s) | 1995 or 1996 No. of Employees Retail | Non-Retail |
|---|---|---|---|---|
| 400 Blue Hill Drive ("Westwood Office Park") | 3 | Elcom Systems | | \ |
| | | Shoplink Inc. | | \ |
| | | V.S.H. & Sons | | 40 |
| | | Westwood Park Restaurant | | / |
| | | Westwood Park Deli | | / |
| 75-77 University Avenue | 5 | Nimrod | | |
| Rosemont Road | 41 | LTX Corporation | | 1000 |
| Marymount Avenue | 41 | Stream International Inc. | | 800 + |
| | | Boston Globe | | |
| 151 University Avenue | 42 | Behring Diagnostics Inc. | | 340 |
| 165 University Avenue | 42 | CIC Systems Inc. | | 130 |
| 201 University Avenue | 42 | Computer Associates | | |
| 245 University Avenue | 43 | Joseph Eletto Transfer | | |
| 35 Harvard Street | 43 | Heritage Inks International | | |
| 40-46 Harvard Street | 43 | Armstrong Labs, Inc. | | |
| | | Output Technologies | | 238 |

(Robert Sievert, 970109, UABusLoc.xls)

**C-1, cont.**

| Address (WESTWOOD) | Traffic Zone | Firm(s) | 1995 or 1996 No. of Employees Retail | | Non-Retail | |
|---|---|---|---|---|---|---|
| 295 University Avenue | 44 | Dataware Products | | | 24 | |
| | | New England Golf Corporation | | | | |
| 345 University Avenue | 44 | Metropolitan Cabinet Dist. (Leicht) | | | | |
| 349-365 University Avenue | 44 | EXEL Logistics | | | | |
| | | Maxwell Shoe | | | | |
| | | Shoplink | | | | |
| 375-379 University Avenue | 44 | Dynamic Automated Systems, Inc. | | | | |
| | | Belvedere Co. Showroom | | | | |
| 381-387 University Avenue | 44 | ATLAS OIL Co. | | | | |
| | | Magetech Inc. | | | | |
| | | Docuserve | | | | |
| | | Americom | | | | |
| 505 Blue Hill Drive | 4 | General Motors (Service Parts Operations) | | | 300 | |
| 154 University Avenue | 37 | White Lodge Water Treatment Plant | | | 10 | |
| | | MIB inc | | | 212 | |
| 190 University Avenue | 37 | Newman Associates, Inc. | | | | |
| 200 University Avenue | 37 | Wisconsin Cheese | | | | |
| | | Caputo | | | | |
| | | Fairchild | | | | |
| 25-31 Dartmouth Street | 38 | Streamline | | | 33 | |
| | | SSI | | | | |
| | | Cambride Sound Works | | | | |

**C-1, cont.**

| Address (WESTWOOD) | Traffic Zone | Firm(s) | 1995 or 1996 No. of Employees Retail | | Non-Retail | |
|---|---|---|---|---|---|---|
| 240 University Avenue | 38 | R.H. Scales | | | | |
| | | Famous Pizza | | | | |
| | | Back Bay Bagel | | | | |
| 270 University Avenue | 39 | Semline Inc. | | | | |
| Yale Street | 39 | ROMANOW Container | | | | |
| 350 University Avenue | 40 | 2nd Nature Interactive | | | | |
| 352 University Avenue | 40 | Primary Health & Child Health | | | | |
| 356 University Avenue | | Sturdy Corp. | | | | |
| | | Target Electronics | | | | |
| 360 University Avenue | 40 | United Marketing Service | | | | |
| 362 University Avenue | 40 | Petroleum Heat & Power | | | | |
| 364 University Avenue | 40 | EEC Training Center | | | | |
| 372 University Avenue | 40 | EEC | | | | |
| 374 University Avenue | 40 | Peterson School | | | | |
| 392 University Avenue | 40 | Griphoist | | | 30 | |
| 410 University Avenue | 40 | Copley Controls Corp. | | | | |
| 376-90 University Avenue | 40 | Distributer Corp. | | | | |
| | | Filterfresh | | | 5 | |
| | | SONY Service Center | | | 4 | |

**C-1, cont.**

| Address (WESTWOOD) | Traffic Zone | Firm(s) | 1995 or 1996 No. of Employees Retail | | Non-Retail | |
|---|---|---|---|---|---|---|
| 690 Canton Street ("Westwood Business Centre") | 45 | Advisor Technology Services LIC | | | | |
| | | Bombaci - Mitchell | | | | |
| | | Cafe Cybolo Restaurant | | | | |
| | | Craemer Dickson Basford | | | 8 | |
| | | Donovan, Sullivan & Ryan | | | 11 | |
| | | HWS Group | | | | |
| | | Jon Morris & Co., Inc. | | | | |
| | | McDonald's Corporation | | | | |
| | | Merck Human Health Division | | | | |
| | | MetLife Progressions Planning Center | | | | |
| | | More Systems | | | | |
| | | Transamerica | | | | |
| | | The Premier Insurance Company of Massachusetts | | | | |
| | | Samuel & Associates | | | | |
| | | Star Legal Inc. | | | | |
| | | Pezrow New England Inc. | | | | |
| | | Pathways Healthcare Services Inc. | | | | |
| | | New Amsterdam Financial Group | | | | |
| | | Network Equipment Technologies | | | | |
| | | | | | | |
| (NORWOOD) | | | | | | |
| 670-675 Canton Street | 16 | Atlantic Poly, Inc. | | | 12 | |
| | | Olympic Adhesive | | | | |
| | | C&G/Glory | | | | |
| | | California Prod. Corp. | | | | |
| | | Brookline Trans. | | | 5 | |
| | | Radford/Cody | | | 5 | |
| | | Barrett Warehouse | | | 7 | |
| | | Home Depot (office & distribution) | | | 10 | |
| | | | | | | |
| 10-249 Oceana Way | 16 | Harrison Specialty Co., Inc. | | | | |
| | | Catalink Direct! (an Elcom International Company) | | | | |

**C-1, cont.**

| Address (NORWOOD) | Traffic Zone | Firm(s) | 1995 or 1996 No. of Employees Retail | Non-Retail |
|---|---|---|---|---|
| 685 Canton Street | 16 | Horizon House | | |
| | | Artech House | | |
| | | Microwave Journal | | |
| | | Journal of Electronic Defense | | |
| | | Telecommunications (Americas) | | |
| | | Adtech Publications & Exhibitions | | |
| | | Telecommunications (International) | | |
| | | LABCORP | | |
| 725 Canton Street | 16 | ENTEX Information Services | | |
| | | Oxbow Realty, Inc. | | |
| | | Wolf Construction | | |
| | | Cornerstone Corp | | |
| | | Praegitzer Industries | | |
| 425 University Avenue | 16 | Cramer | | 20 |
| 555 University Avenue | 16 | Adlife | | 18 |
| 565 University Avenue | 16 | Gannett Offset | | |
| 575 University Avenue | 16 | Apria Health Care | | |
| | | Bisys | | |
| | | Micro Media | | |
| 625 University Avenue | 16 | STAR MARKET | | |
| 825 University Avenue | 16 | Jet Spray Corporation | | 130 |
| 1045 University Avenue | 16 | United Parcel Service | | 500 |

**C-1, cont.**

| Address (NORWOOD) | Traffic Zone | Firm(s) | 1995 or 1996 No. of Employees Retail | Non-Retail |
|---|---|---|---|---|
| 428 University Avenue | 17 | Grainger | | 15 |
| __ University Avenue ("Meditech Greens") | 17 | Medical Information Technology, Inc. | | |
| 846 University Avenue | 17 | New York Life (Benefit Services) | | 350 |
| 1030 University Avenue | 17 | Clayton Manufacturing Co., Inc. | | |
| | | Standard Management Corp. | | |
| 1050 University Avenue | 17 | United (or American) Steel and Aluminum | | |
| 750 Everett Street | 15 | Whitehall Company Ltd | | \ |
| | | Branded Wines Ltd | | 35 |
| | | Branded/New England Liquors | | / |
| (CANTON) | | | | |
| 15 University Road | 33 | Charlotte | | |
| | | Davenport | | |
| | | Shipps, Inc. | | |
| | | Tuckahoe Turf | | |
| | | Harrison Specialty Co. | | |
| | | Shield Packaging Co. | | |
| 770 Dedham Street ("The Park at 95") | 33 | Masterpiece Video & Photography | | 2 |
| | | Carousel Fashions | | |
| | | Kesco Services, Inc. | | |
| | | ESCOA | | |
| | | PSR Information Systems | | |
| | | Desktop Publishing Service Bureau | | |
| | | ABC Publications, Inc. | | 3 |

| C-1, cont. | | | | | | |
|---|---|---|---|---|---|---|
| | Traffic | | 1995 or 1996 No. of Employees | | | |
| Address (CANTON) | Zone | Firm(s) | Retail | | Non-Retail | |
| 725 Dedham Street | 35 | Reiser | | | | |
| 755 Dedham Street | 35 | Fibersence Technology | | | 10 | |
| | | Boston Special Risks | | | | |
| 777 Dedham Street | 36 | Cumberland Farms | | | 750 | |
| 5 Shawmut Road | 34 | Computer Identics | | | 60 | |
| 60 Shawmut Road | 34 | ENTEX | | | | |
| 1 Colgate Way | 34 | Colgate Pharmaceutlcals | | | | |
| __ Royall Street | 30 | INSTRON | | | 300 | |
| 120 Royall Street | 30 | Boston Mutual Life | | | 300 | |
| 150 Royall Street ("Blue Hills Office Park") | 30 | Boston Equi Serve | | | 751 | |

*(Please review: Do these firms still exist at these locations, or elsewhere in the study area?*

TABLE C-2

*What are the estimated 1995 or 1996 employment levels for each firm?)*

## *University Avenue Traffic Study*
## *Employer Verification List*

| Name | Street Number | Street | Town | Tract | Block | Zone |
|---|---|---|---|---|---|---|
| ~~KENNEDY SCHOOL~~ | ~~760~~ | ~~DEDHAM ST~~ | ~~CANTON~~ | ~~4151.01~~ | ~~922~~ | ~~25~~ |
| ~~BAY STATE WHOLESALERS INC~~ | ~~762~~ | ~~DEDHAM ST~~ | ~~CANTON~~ | ~~4151.01~~ | ~~922~~ | ~~25~~ |
| ~~THE SPORT PAGE~~ | ~~33~~ | ~~DEDHAM ST~~ | ~~CANTON~~ | ~~4153~~ | ~~903~~ | ~~25~~ |
| COLGATE-HOYT LABORATORIES | 1 | COLGATE WAY | CANTON | 4153 | 905 | ~~29~~ 34 |
| HARRISON SPECIALTY CO INC | 15 | UNIVERSITY RD | CANTON | 4151.01 | 902 | 33 |
| SHIELD PACKAGING CO INC | 15 | UNIVERSITY RD | CANTON | 4151.01 | 902 | 33 |
| TUCKAHOE TURF FARMS INC | 15 | UNIVERSITY RD | CANTON | 4151.01 | 902 | 33 |
| TUCKAHOE LAWN CARE INC | 21 | UNIVERSITY RD | CANTON | 4151.01 | 902 | 33 |
| CUMBERLAND FARMS INC | 777 | DEDHAM ST | CANTON | 4151.01 | 904 | ~~34~~ 36 |
| UNTD CRNBRY GRWRS ASCTN | 777 | DEDHAM ST | CANTON | 4151.01 | 904 | ~~34~~ 36 |
| COMPUTER IDENTICS CORPORATION | 5 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| PERCEPTION TECHNOLOGY CORP | 40 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| SPECIAL PPRODUCTS ENGINEERING | 50 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| IMPACT SALES | 55 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| PANTRESSE INC | 55 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| UNISTRUT NORTHEAST DIV | 55 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| ALMO ELECTRONICS INC | 60 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| CHANDLER & FARQUHAR COMPANY | 60 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| ARTEC | 65 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| TAYLOR FREEZER RENTAL | 65 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| ANALOG DEVICES INC | 70 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| NEECO INC | 70 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| B L H ELECTRONICS INC DEL | 75 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| ARNOLD INDUSTRIES INC | 80 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| NATIONAL DOOR CORP | 80 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| BAINBRIDGE SAIL CLOTH | 90 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| SALAH & PECCI LEASING CORP | 100 | SHAWMUT RD | CANTON | 4151.01 | 905 | 34 |
| STAR-OSCO | 105 | SHAWMUT RD | CANTON | 4151.01 | 904 | 34 |
| A G M INDUSTRIES INC | 110 | SHAWMUT RD | CANTON | 4151.01 | 904 | 34 |
| CABLE-MASTERS INC | 110 | SHAWMUT RD | CANTON | 4151.01 | 904 | 34 |
| TRANSKINETICS | 110 | SHAWMUT RD | CANTON | 4151.01 | 904 | 34 |
| OTIS CLAPP & SON INC | 115 | SHAWMUT RD | CANTON | 4151.01 | 904 | 34 |
| WALWORTH COMPANY THE* | 115 | SHAWMUT RD | CANTON | 4151.01 | 904 | 34 |
| GRINNELL CORPORATION | 120 | SHAWMUT RD | CANTON | 4151.01 | 904 | 34 |
| DRESSR-MSNEILAN VALVE CTRL DIV | 125 | SHAWMUT RD | CANTON | 4151.01 | 904 | 34 |
| RELIANCE PRINTING CO | 50 | HUDSON RD | CANTON | 4151.01 | 904 | 34 |
| MACISAAC OFFICE PRODUCTS | 80 | HUDSON RD | CANTON | 4151.01 | 904 | 34 |
| DUNN COPY PRODUCTS INC | 90 | HUDSON RD | CANTON | 4151.01 | 904 | 34 |
| GERALD J RYAN CPA | 100 | HUDSON RD | CANTON | 4151.01 | 904 | 34 |
| SALAH-PECCI SUPPLY CO INC | 100 | HUDSON RD | CANTON | 4151.01 | 904 | 34 |
| ROBERT REISER & COMPANY INC | 725 | DEDHAM ST | CANTON | 4151.01 | 904 | 35 |
| CRAFTS PRECISION INDUSTRIES | 755 | DEDHAM ST | CANTON | 4151.01 | 904 | 35 |
| ACCUDATA INC | 770 | DEDHAM ST | CANTON | 4153 | 903 | ~~25~~ 33 |
| CAROUSEL FASHIONS INC | 770 | DEDHAM ST | CANTON | 4153 | 903 | ~~25~~ 33 |
| SYLVESTER FINANCIAL | 770 | DEDHAM ST | CANTON | 4153 | 903 | ~~25~~ 33 |
| VOICE SYSTEMS ITT INC | 770 | DEDHAM ST | CANTON | 4153 | 903 | ~~25~~ 33 |
| PHOENIX FEEDS/PECK/CUMBER | 777 | DEDHAM ST | CANTON | 4151.01 | 904 | 36 |

## *University Avenue Traffic Study*
## *Employer Verification List*

| Name | Street Number | Street | Town | Tract | Block | Zone |
|---|---|---|---|---|---|---|
| GAGGENAU USA CORP | 425 | UNIVERSITY AVE | NORWOOD | 4131 | 901 | 16 |
| BOSTON OFFSET | 565 | UNIVERSITY AVE | NORWOOD | 4131 | 901 | 16 |
| HOYT LABORATORIES | 575 | UNIVERSITY AVE | NORWOOD | 4131 | 901 | 16 |
| N A D | 575 | UNIVERSITY AVE | NORWOOD | 4131 | 901 | 16 |
| STAR MARKET DIV | 625 | UNIVERSITY AVE | NORWOOD | 4131 | 901 | 16 |
| JET SPRAY CORP | 825 | UNIVERSITY AVE | NORWOOD | 4131 | 901 | 16 |
| UNITED PARCEL SERVICE INC OHIO | 1045 | UNIVERSITY AVE | NORWOOD | 4131 | 901 | 16 |
| SEABROOK WALLCOVERINGS INC | 249 | OCEANA WAY | NORWOOD | 4131 | 901 | 16 |
| CODY EXPRESS INC | | OCEANA WAY | NORWOOD | 4131 | 901 | 16 |
| W W GRAINGER INC | 428 | UNIVERSITY AVE | NORWOOD | 4131 | 902 | 17 |
| PHOENIX TECHNOLOGIES LTD | 846 | UNIVERSITY AVE | NORWOOD | 4131 | 902 | 17 |
| CLAYTON UNIFORM MFG CO | 1030 | UNIVERSITY AVE | NORWOOD | 4131 | 902 | 17 |
| AMERICAN STEEL & ALUM CORP MA | 1050 | UNIVERSITY AVE | NORWOOD | 4131 | 902 | 17 |
| OLYMPIC ADHESIVES INC | 670 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| ATLANTIC WAREHOUSE INC | 675 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| J & L ASSOCIATES INC | 675 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| NORWHIT WAREHOUSING INC | 675 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| RADFORD TRANS INC | 675 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ 16 |
| ARTECH HOUSE INC | 685 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| HORIZON HOUSE-MICROWAVE INC | 685 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| OPHTHALMIC VENTURES | 685 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| TECHNOLOGY INTERNATIONAL CORP | 685 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| DIMEO ENTERPRISES INC | 725 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| STONE COMPANY INC | 725 | CANTON ST | NORWOOD | 4131 | 201 | ~~21~~ |
| Route 128 Commuter Rail Station | | UNIVERSITY AVE | WESTWOOD | 4023 | 302 | 1 |
| EQUITY PRPTS INVESTMENTS LTD* | 400 | BLUE HILL DR | WESTWOOD | 4123 | 102 | 3 |
| HERITAGE TRAVEL | 400 | BLUE HILL DR | WESTWOOD | 4123 | 102 | 3 |
| REEF WATCHMAKER & CO PC | 400 | BLUE HILL DR | WESTWOOD | 4123 | 102 | 3 |
| SHELL OIL COMPANY | 400 | BLUE HILL DR | WESTWOOD | 4123 | 102 | 3 |
| VERSYSS INCORPORATED | 400 | BLUE HILL DR | WESTWOOD | 4123 | 102 | 3 |
| GENERAL MOTORS-SPO | 505 | BLUE HILL DR | WESTWOOD | 4123 | 108 | 4 |
| HUB MAIL ADVERTISING SERVICE | 75 | UNIVERSITY AVE | WESTWOOD | 4123 | 102 | 5 |
| [illegible] | [illegible] | CANTON ST | WESTWOOD | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | CANTON ST | WESTWOOD | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | CANTON ST | WESTWOOD | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | CANTON ST | WESTWOOD | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | BLUE HILL DR | WESTWOOD | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | BLUE HILL DR | WESTWOOD | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | BLUE HILL DR | WESTWOOD | [illegible] | [illegible] | [illegible] |
| WHITEWOOD GARDEN CENTER | 449 | BLUE HILL DR | WESTWOOD | 4123 | 108 | 7 |
| [illegible] | [illegible] | CANTON ST | WESTWOOD | [illegible] | [illegible] | [illegible] |
| MEDICAL INFORMATION BUREAU | 160 | UNIVERSITY AVE | WESTWOOD | 4123 | 109 | 37 |
| NEWMAN ASSOCIATES INC | 190 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 37 |
| AMERICAN PRO INC | 200 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 37 |
| CAVCO INC | 200 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 37 |
| NEW ENGLAND NUCLEAR CORP | 240 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 38 |
| WHIRLPOOL ACCEPTANCE CORP DEL | 26 | DARTMOUTH AVE | WESTWOOD | 4123 | 108 | 38 |

C-2, cont.

## *University Avenue Traffic Study*
## *Employer Verification List*

| Name | Street Number | Street | Town | Tract | Block | Zone |
|---|---|---|---|---|---|---|
| EASTCO | 26 | DARTMOUTH ST | WESTWOOD | 4123 | 108 | 38 |
| SPAULDING-MOSS WESTWOOD DIV | 270 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 39 |
| KAMAN BEARING & SUPPLY CORP | 354 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 40 |
| UNITED MARKETING SERVICES INC | 360 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 40 |
| BOSTON OCEAN CARRIERS | 362 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 40 |
| MEDICAL SYSTEMS SALES DIVISION | 374 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 40 |
| ADCOM PRODUCTS INC | 378 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 40 |
| SONY SERVICE CENTER | 390 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 40 |
| GRIPHOIST INC | 392 | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 40 |
| LTX CORPORATION | | UNIVERSITY AVE | WESTWOOD | 4123 | 108 | 41 |
| GE APPLIANCES SALES | 105 | ROSEMONT RD | WESTWOOD | 4123 | 105 | 41 |
| P B DIAGNOSTIC SYSTEMS INC | 151 | UNIVERSITY AVE | WESTWOOD | 4123 | 102 | 42 |
| COPLEY SYSTEMS CORPORATION | 165 | UNIVERSITY AVE | WESTWOOD | 4123 | 102 | 42 |
| LODGE AT HARVARD SQUARE INC | 165 | UNIVERSITY AVE | WESTWOOD | 4123 | 102 | 42 |
| COMPUTER ASSOCIATES INTL | 201 | UNIVERSITY AVE | WESTWOOD | 4123 | 105 | 42 |
| PRINTING INK DIVISION | 35 | HARVARD ST | WESTWOOD | 4123 | 105 | 43 |
| THE RICHARDSON TRIDENT CO | 35 | HARVARD ST | WESTWOOD | 4123 | 105 | 43 |
| HOUSE OF SEAGRAM | 40 | HARVARD ST | WESTWOOD | 4123 | 105 | 43 |
| BULL H N WORLDWIDE INFORMATION | 47 | HARVARD ST | WESTWOOD | 4123 | 105 | 43 |
| DATAWARE PRODUCTS CORPORATION | 295 | UNIVERSITY AVE | WESTWOOD | 4123 | 105 | 44 |
| METROPOLITAN CABINET DISTRS | 295 | UNIVERSITY AVE | WESTWOOD | 4123 | 105 | 44 |
| PAYROLL EXPRESS THE | 295 | UNIVERSITY AVE | WESTWOOD | 4123 | 105 | 44 |
| A-COPY | 315 | UNIVERSITY AVE | WESTWOOD | 4123 | 105 | 44 |
| BRUNING DIVISION | 375 | UNIVERSITY AVE | WESTWOOD | 4123 | 105 | 44 |
| MULTIGRAPHICS DIVISION | 377 | UNIVERSITY AVE | WESTWOOD | 4123 | 105 | 44 |
| T F EARLEY & SON INC | 385 | UNIVERSITY AVE | WESTWOOD | 4123 | 105 | 44 |
| BOSTON REGIONAL OFFICE | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| CODEX CORPORATION | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| COSTELLO & CO INC | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| DEL MONTE FOODS | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| EASTERN BUSINESS SYSTEMS INC | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| HEALEY & STEWART | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| JON MORRIS AND COMPANY INC | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| MAI BASIC FOUR INC | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| PETER R JOHNSON & ASSOC | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| SYSTEM INDUSTRIES INC | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| TRANSAMERICA FINANCE GROUP | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |
| WELLMARK HEALTHCARE SERVICES | 690 | CANTON ST | WESTWOOD | 4123 | 105 | 45 |

**CTPS** CENTRAL TRANSPORTATION PLANNING STAFF

Technical staff of the Boston Metropolitan Planning Organization

# [APPENDIX A-2]

23 June, 1997

Mr. William Friel
Town Executive Secretary
Town Hall
801 Washington Street
Canton, MA 02021

Dear Mr. Friel:

**Re: Confirmation of future year employment and residential developments in Canton**

As you are aware, the Central Transportation Planning Staff (CTPS) is conducting a traffic study for MassHighway in the Canton, Dedham, Norwood, and Westwood area. The study was requested by the local communities and the Three Rivers Interlocal Council (TRIC) in order to develop, test, and recommend, strategies for improved roadway access and traffic circulation in the area. As a part of this effort, CTPS will also develop suggestions as to how locations with particularly severe congestion and operational difficulties could be made to function better.

To this end, CTPS is creating a future year traffic simulation model. As input to the model, CTPS recently solicited data and information on *"most likely to occur"* employment and residential developments from each community and from the Neponset Valley Chamber of Commerce, as represented at the Route 128 Station Task Force meetings.

Based in part on the responses received, a summary of employment developments is provided in the attached table, by community. As of today, no specific, large-scale, residential developments have been reported to CTPS by any of the four study area communities (the study area consists of all of Canton; the eastern halves of Norwood and Westwood - approximately from Route 1A eastward; and, the very southeastern edge of Dedham - from Allied Drive through the Route 128 Station area; see the attached map). These developments will, together with background forecasts of employment and residential households by the Metropolitan Area Planning Council (MAPC), be used as input to the study area's traffic forecasts for the years 2005 and 2020.

Through this letter, *CTPS is formally requesting each community's corroboration / addition / correction / input on the attached future year employment and residential developments.* To construct as accurate a model as possible when estimating future year scenarios, CTPS wishes to allow each community every opportunity to provide input into this process.

State Transportation Building • Ten Park Plaza, Suite 2150 • Boston, MA 02116-3968 • (617) 973-7100 • Fax (617) 973-8855 • TTY (617) 973-7089 • ctps@ctps.org

William Friel

23 June, 1997

In order to complete this process in a timely fashion. please respond *in writing* whether the attached data represent the *"most likely to occur"* employment (and residential?) scenario for Canton. CTPS would appreciate receiving your written response by *Monday July 7*, so that the overall modelling and traffic forecasting process may continue at a reasonable pace.

Should you have any questions pertaining to this request, or regarding the modelling process or the overall study in general, please feel free to call me at (617) 973-7138. Should I be unavailable, you may contact Efi Pagitsas, Manager of CTPS' Traffic Analysis and Design group at (617) 973-7106.

Thank you for your cooperation.

Sincerely,

Robert Sievert

Robert Sievert
Project Manager

RES/res

Attachments Employment developments, by community
Residential developments, by community
Study area map

cc: Ken Miller, BTP&D, MassHighway
Steve Silveira, MBTA
Roger Nicholas, Canton
William Griffin, Dedham
Arthur Noonan, Dedham
John Carroll, Norwood
Steve Costello, Norwood
Michael Jaillet, Westwood
Maureen Bleday, Westwood

## UNIVERSITY AVENUE/I-95/ROUTE 128 STATION STUDY
## PROPOSED EMPLOYMENT AND RESIDENTIAL DEVELOPMENTS BY COMMUNITY

### EMPLOYMENT

### CANTON

| PROJECT NAME | ADDRESS | SIZE (SF) | TYPE | EMP | DATE |
|---|---|---|---|---|---|
| New England Door Relocation | Canton Technology Center Cedar Street | 85,000 | light manufacturing | 159 | by 2005 |
| E.F. Merkert Corporate Center | 500 Turnpike Street | 35,829 | office | 121 | by 2005 |
| Connors Wayside Furniture | 300 Turnpike Street | 5000 | warehouse to retail | 9 | by 2005 |
| | Carver & Exeter Circle | 64,000<br>16,000 | warehouse<br>office | 82<br>54 | by 2005 |
| Blue Hills Corporate Center | 200 Royall Street | 400,000 | office | 1,540 | by 2005 |
| Reebok International Ltd. | Route 138/Royall Street | 400,000 | office | 1,288 | by 2005 |
| | 140 Royall Street | 125,000 | office | 480 | by 2005 |
| Canton Commerce Center | Dan Road | | office | 2,000 | by 2005 |

Additional?:

### NORWOOD

| PROJECT NAME | ADDRESS | SIZE (SF) | TYPE | EMP | DATE |
|---|---|---|---|---|---|
| | Rt 1 and Morse St Ext | 20,000<br>12,000 | retail<br>office | 34<br>39 | by 2005<br>by 2005 |
| | University Av & Everett St | 400,000 | office/warehouse | 512 | by 2005 |
| Speigle Development | Morse Street Ext | 30,000 | retail | 55 | by 2005 |
| Former Pet Supply Site | Morse Street Ext | 40,000 | retail | 73 | by 2005 |
| River Ridge Office Park | River Ridge Drive | 117,000 | office | 449 | by 2005 |
| Sumner St Market Place | Sumner Street | 212,575 | shopping center | 362 | by 2005 |

Additional?:

**UNIVERSITY AVENUE/I-95/ROUTE 128 STATION STUDY**
**PROPOSED EMPLOYMENT AND RESIDENTIAL DEVELOPMENTS BY COMMUNITY**

**EMPLOYMENT ( CONTINUED)**

**WESTWOOD**

| PROJECT NAME | ADDRESS | SIZE (SF) | TYPE | EMP | DATE |
|---|---|---|---|---|---|
| Summit Site | Marymount Av | 350,000 | office | 1,127 | by 2005 |
| | 505 Blue Hill Drive (warehouse to office) | 280,000 | office | 854 (additnl) | by 2005 |
| Nimrod Press | 75 University Av (site has 75 emp now) | | office | 175 (additnl) | by 2005 |
| Stream International | 105 Rosemont (site has 800 emp now) | | office | 200 (additnl) | by 2005 |
| | 270 University Av (warehouse to office) (site has 3 emp now) | 50,000 | office | 167 (additnl) | by 2005 |
| | 35 Harvard Street (warehouse to office) (now 20,000sf) | 30,000 | office | 76 (additnl) | by 2005 |
| | Dartmouth Street (now empty) | 85,000 | office and R&D | 288 | by 2005 |

Additional?:

**DEDHAM**

| PROJECT NAME | ADDRESS | SIZE (SF) | TYPE | EMP | DATE |
|---|---|---|---|---|---|

NO PROJECTS REPORTED

## UNIVERSITY AVENUE/I-95/ROUTE 128 STATION STUDY
## PROPOSED EMPLOYMENT AND RESIDENTIAL DEVELOPMENTS BY COMMUNITY

**RESIDENTIAL**

| PROJECT NAME | ADDRESS | TYPE | UNITS | DATE |
|---|---|---|---|---|

No community reported large scale residential development.
Normal development is assumed in background growth.

-PROJECT STUDY AREA-
NORWOOD MEMORIAL AIRPORT
Norwood
Pinkspoag
Reservoir Pond
Muddy Pond
Easton Junction
East Walpole
Westwood
Dedham
Needham
Hemenway Hill
Watson Hill
Blue Hill Country Club
Spring Valley Country Club
Golf Course
INTERCHANGE 64
INTERCHANGE 65
INTERCHANGE 66
INTERCHANGE 67
Pinkspoag Outdoor Center (YMCA)
Drive-in Theatre
Gravel Pit
Cemetery
Brook
River
Meadow
Swamp
Woods

# [APPENDIX A-3]

## MEMORANDUM

**TO:** **University Avenue / I-95 / Route 128 Station Study Task Force** **14 March, 1997**

**FROM:** **Robert Sievert**

**RE:** **Evaluation Criteria to be Applied to Proposed Improvement Alternatives; Solicitation of Future Year Socioeconomic Data by Community (to be discussed at the 25 March Task Force meeting, 3:00 PM, Westwood Town Hall)**

During the past few months, CTPS, with much appreciated help from the Route 128 Station Task Force representatives, has collected various data to be used in a study area traffic simulation model. All the base year data have been gathered, and are currently being assembled to create the 1995 calibrated model. These data include AM and PM peak hour, as well as 24-hour, traffic counts; existing roadway characteristics such as link distances, speeds, capacities, and number of lanes; socioeconomic data, broken down into retail and non-retail employment, and number of households, distributed into 45 traffic analysis zones throughout four communities: all of Canton; Westwood and Norwood, essentially east of Route 1A; and the very southeastern edge of Dedham.

At last month's meeting (25 February), discussion began to focus on specific traffic problems throughout the study area, with an emphasis on the area around the rail station and the I-95/I-93 interchange. Also, the possible improvement alternatives which would address some of the traffic problems were discussed, and a preliminary list of criteria for the evaluation of the alternatives was presented.

The purpose for this memorandum is twofold: (1) To present a revised list of evaluation criteria. (2) To solicit the help of town planners, and community and economic development specialists in providing CTPS with future year employment and household data. These two items are discussed below.

### Evaluation Criteria.

The following two pages contain a revised list of the criteria presented at last month's meeting. Each criterion is defined so as to show its relationship to the goals and concerns of the Task Force member communities. Please be prepared to discuss this list at the meeting for final approval.

Revised list of criteria to be used in evaluating proposed roadway improvements:

- *Traffic congestion*.

Streets, ramps, intersections, and highways in the study area may be congested in the peak hours, or at other times during the day.

HOW LIKELY WOULD A PROPOSED IMPROVEMENT ALTERNATIVE BE IN REDUCING CONGESTION LEVELS?

- *Overall safety*.

Accidents, "near misses," dangerous situations involving vehicle-bicycle-pedestrian conflicts may be endemic to specific study area roadways and intersections.

HOW EFFECTIVE WOULD A PROPOSED IMPROVEMENT BE IN CREATING SAFER OPERATIONAL CONDITIONS?

- *Local roadway circulation and access*.

Each community is connected internally and externally via streets, bridges, ramps, and highways. Also, parts of, or entire, communities may be divided by "barriers" (rail lines, Interstate highways, waterways, etc.). These barriers may or may not be easily traversed. The current local roadway network may be well, or not so well, connected to the regional highway system, public transportation facilities, employment, commercial, or recreational activities.

TO WHAT DEGREE WOULD A PROPOSED IMPROVEMENT ALTERNATIVE AFFECT LOCAL ROADWAY CIRCULATION AND ACCESS?

- *Neighborhood impacts*.

Some parts of the community may have been experiencing severe impacts in terms of noise, restricted bicycle and pedestrian access and movement, "cut-through" traffic near schools and playgrounds, all due to chronically high auto and truck traffic levels on neighborhood streets.

HOW MUCH WOULD A PROPOSED IMPROVEMENT IMPACT TRAFFIC IN THE SURROUNDING NEIGHBORHOOD?

- *Environmental impacts*.

Specific locations throughout the study area may currently be "hot spots" in terms of poor air quality due to traffic congestion. Other areas may have sensitive natural resources with respect to water (wells, streams, lakes, marsh land) or animal populations.

TO WHAT DEGREE WOULD AN IMPROVEMENT ALTERNATIVE AFFECT VEHICLE EMISSIONS AND/OR A LOCATION'S NATURAL RESOURCES?

- *Economic development*.

Each community defines through local zoning regulations what form of land use is to be pursued, and the specific locations throughout the community where development should occur. The local and regional transportation facilities currently help or hinder a community's economic development to a greater or lesser extent.

TO WHAT DEGREE WOULD A PARTICULAR ALTERNATIVE IMPACT LOCAL ECONOMIC DEVELOPMENT BY IMPROVING TRAFFIC CONDITIONS TO/FROM/BETWEEN DEVELOPED SITES AND THE EXISTING ROADWAY NETWORK?

- *Cost*.

Depending upon the nature of the traffic improvement alternative proposed, an estimated monetary cost is attached.

WOULD THE SPECIFIC ALTERNATIVE BE IMPLEMENTED AT A RELATIVELY LOW COST, OR WOULD THE COST BE TOO HIGH/PROHIBITIVE?

Once the Task Force has approved the list of criteria for evaluating improvements, the focus will shift more towards final development of "packages" of improvement alternatives. Currently, input on improvements has been received from some Task Force members. It is hoped that additional proposals will become available prior to the 25 March meeting. At that time, all proposals received will be presented.

**Future Year Socioeconomic Data**.

As mentioned above, CTPS has collected all necessary employment and household input for the base year traffic model. Future scenarios to be analyzed are for the AM and PM peak hours for the years 2005 and 2020. Similar roadway, projected traffic volume, and socioeconomic data are thus required to assemble the future year models, as was done for the 1995 model.

CTPS is therefore requesting input on the following:

- Employment developments *most likely* to be occupied, by type and by address, expressed in terms of expected *number of employees* or of *total building square footage* at the specific site.
  (1) *Most likely* to be occupied **by 2005**
  (2) *Most likely* to be occupied **after 2005** (but by 2020)

- Number of new residential housing units *most likely* to be occupied, by address within each community.
  (1) *Most likely* to be occupied **by 2005**
  (2) *Most likely* to be occupied **after 2005** (but by 2020)

It is hoped that CTPS will be able to draw on the expertise and resources of the communities on likely employment and housing developments by, or after 2005. The more input and detail received, the more it is expected that the future year models will produce realistic and accurate traffic forecasts. The cooperation of the Task Force and community representatives in this matter is highly appreciated.

RES/res

cc: Ken Miller, BTP&D, MHD
Dan Fortier, MAPC
Steve Silveira, MBTA

# [APPENDIX A-4]

## MEMORANDUM

**TO:** **University Avenue / I-95 / Route 128 Station Study Task Force** **25 March, 1997**

**FROM:** **Robert Sievert**

**RE:** **Summary of Study Area Traffic Problems and of Improvement Alternatives Received from Task Force Representatives**

## Study Area Traffic Problems

At last month's (25 February) Route 128 Station Task Force meeting, CTPS presented maps of traffic problem locations throughout the study area. The maps displayed roadway segments and intersections where severe operational problems and high levels of traffic congestion were known to exist. This information had been assembled, in part, based on earlier discussions with Task Force representatives. The maps included the problem locations which had been analyzed for operational levels of service, for both the 1995 AM and PM peak hours. The locations are summarized in Table 1 below, and are also depicted (for the 1995 PM peak hour) in Figure 1.

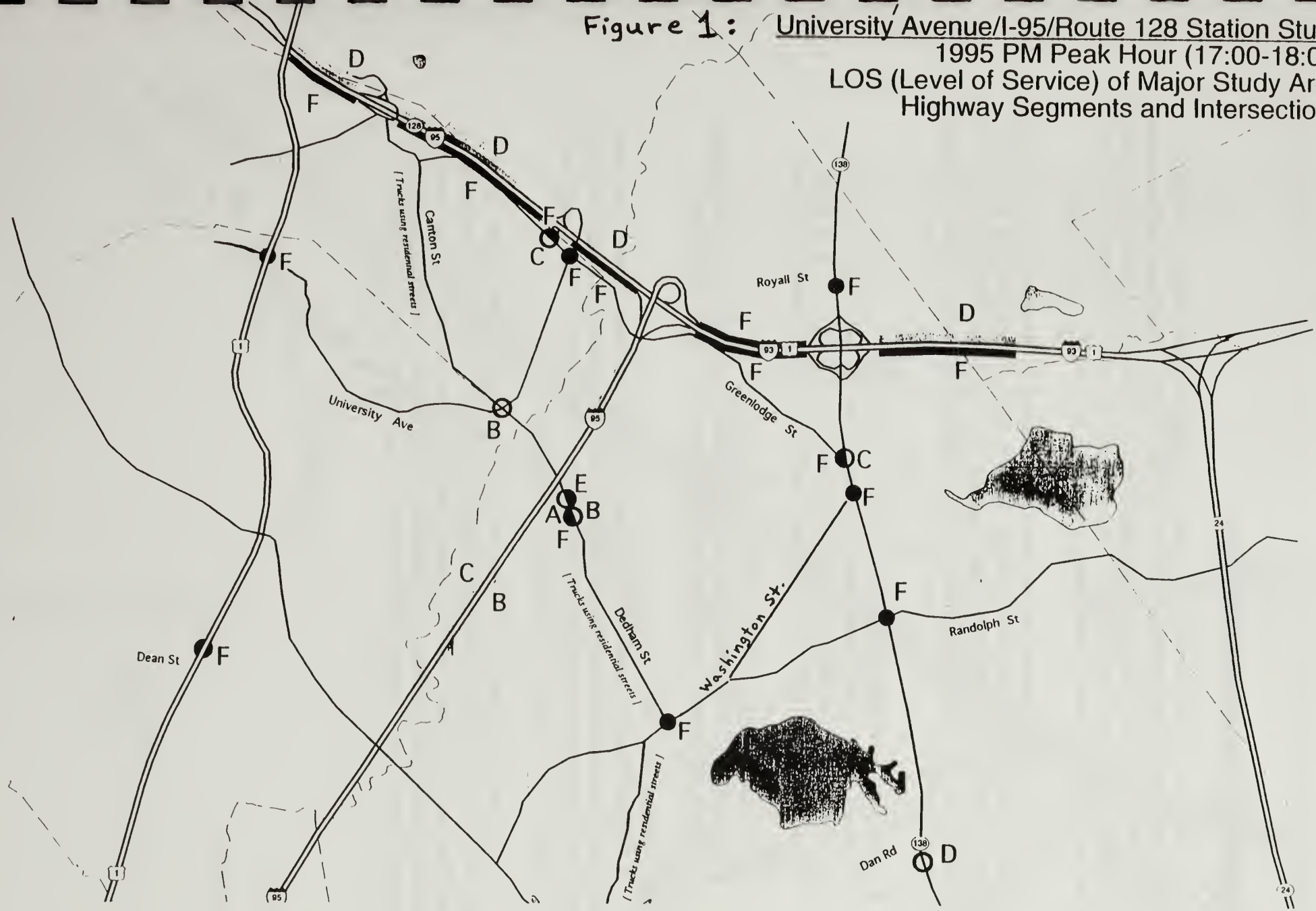
Additional traffic problems and issues were discussed at this and at earlier meetings. These included:

- University Avenue, in Westwood (soon to undergo roadway widening and upgrading)
- Truck access to the University Avenue Industrial Area
- Truck use of residential streets in Westwood and Canton
- The need to be sensitive to environmental and land use constraints when proposing solutions to traffic problems
- The need to be sensitive to bicycle, pedestrian, and shuttle bus access when proposing solutions to traffic problems

| Location | Level of Service AM Pk Hr | PM Pk Hr | Previously Analyzed |
|---|---|---|---|
| - Route 128 mainline, between Route 1 and Ponkapoag Trail (AM, NB; PM, SB) | F | F | Route 128 Transportation Improvement Project |
| - Route 128 (I-93 / I-95) ramp junctions (AM, NB; PM, SB) | F | F | |
| - University Avenue at Blue Hill Drive | F | F | |
| - Route 128 SB ramps at Blue Hill Drive | F, A | F, C | |
| - Route 138 at Royall Street | F | F | |
| - Route 138 at Greenlodge Street | F, D | F, C | |
| - Route 138 at Washington Street | F | F | |
| - Route 138 at Randolph Street | F | F | |
| - Dedham Street at Shawmut Road area | E, A | F, B | |
| - Dedham Street at Washington Street | C | F | |
| - Route 1 at University Avenue/Everett Street | F | F | Route 1 South Corridor Planning Study |
| - Route 1 at Dean Street | F | F | Route 1 South Corridor Planning Study |

**TABLE 1 Study Area Traffic Problem Locations Analyzed for Level of Service**

Figure 1: University Avenue/I-95/Route 128 Station Study
1995 PM Peak Hour (17:00-18:00)
LOS (Level of Service) of Major Study Area
Highway Segments and Intersections



**Suggested Traffic Improvement Alternatives**

At the meeting, there seemed to be general agreement that these indeed were the key locations and issues which warrant some degree of roadway and/or operational improvements. The Task Force was encouraged to develop, and forward to CTPS, its suggestions with respect to improvement alternatives. Various alternatives were received by CTPS during the past month, and this memorandum presents these through a set of eleven 8 ½" x 11" maps (attached).

The alternatives, presented as Improvement Alternatives A through K, range in level of complexity from simply closing the interchange at Route 128 (I-93) at Ponkapoag Trail, the widening of Dedham Street from two to four lanes, to the complete rebuilding of the I-95 / I-93 interchange. Specific improvements which were suggested by Task Force members in a number of alternatives include:

- Rebuild the Greenlodge Street Bridge (Alts. A, B, D, E, F, H)
- Construct an ON-RAMP from Greenlodge Street to I-95 SB (Alts. A, B, D, E, F, H)
- Construct an ON-RAMP from Greenlodge Street to I-93 NB (Alts. A, B, E, F, H)
- Rebuild the Route 128 NB to I-95 SB ramp, and the I-95 NB to Route 128 NB ramp (Alts. A, B, C, G)
- Rebuild the Route 128 / Blue Hill Drive ramps (Alts. A, B, H, I)
- Let Greenlodge Street go between Route 138 and Elm Street only, thereby disconnecting it from the University Avenue and I-95 / I-93 interchange areas (Alts. A, B)

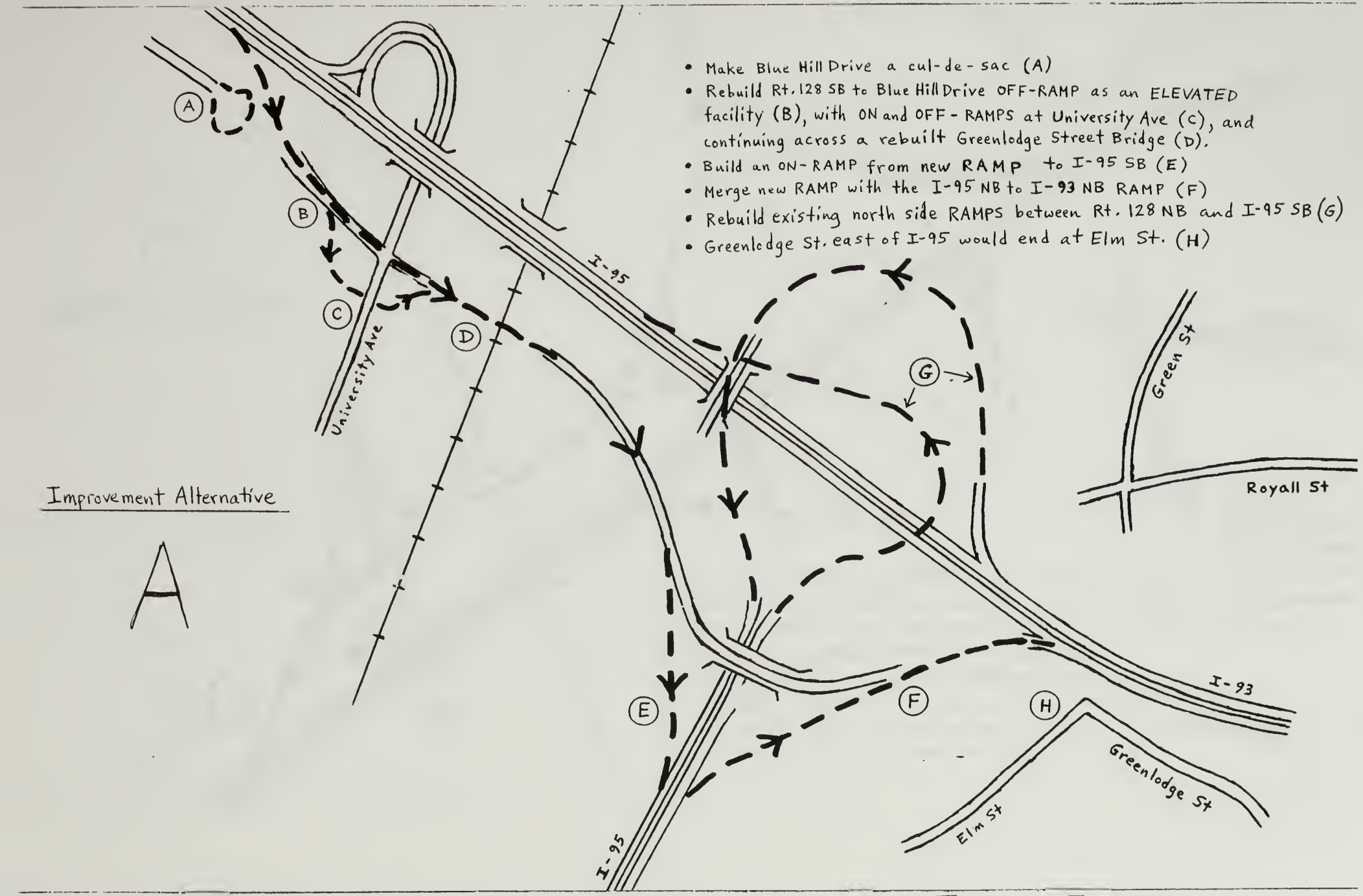
CTPS has begun the process of reviewing all the suggested improvements for at least a basic level of reasonableness and feasibility. This process will continue during the next few weeks, with the support of MassHighway staff. CTPS will also include its own suggestions as to how to improve traffic access and operations in the study area.

At the end of this process, CTPS expects to have combined elements of the various improvements into "packages." These (three/four/five(?) "packages") will be presented to the Task Force, and will be subjected to the evaluation procedure as determined by the evaluation criteria approved by the Task Force. Subsequent to the evaluation of the agreed upon "packages," analysis with respect to travel demand forecasting and future year levels of service will commence.

RES/res

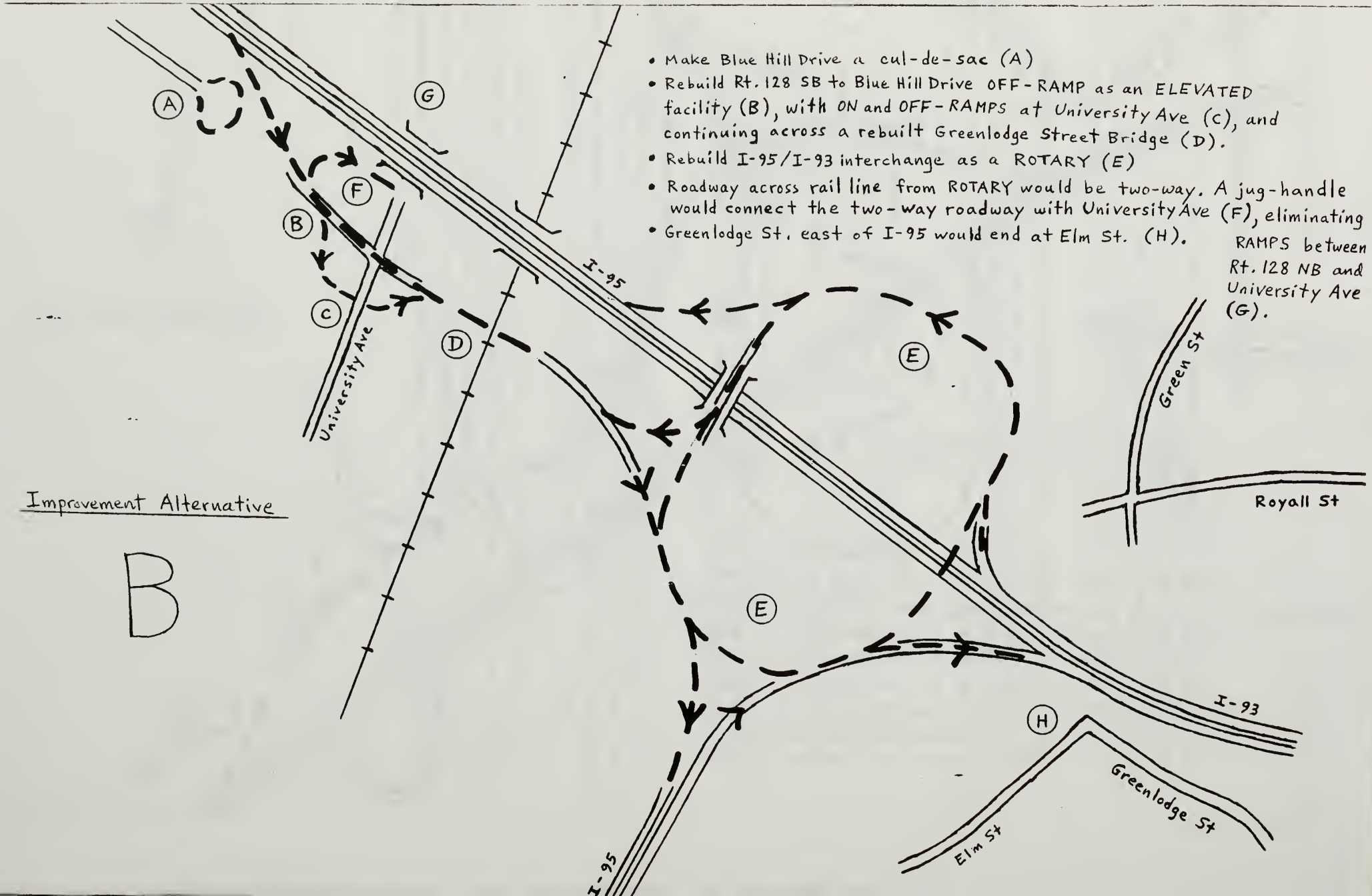
Attachments

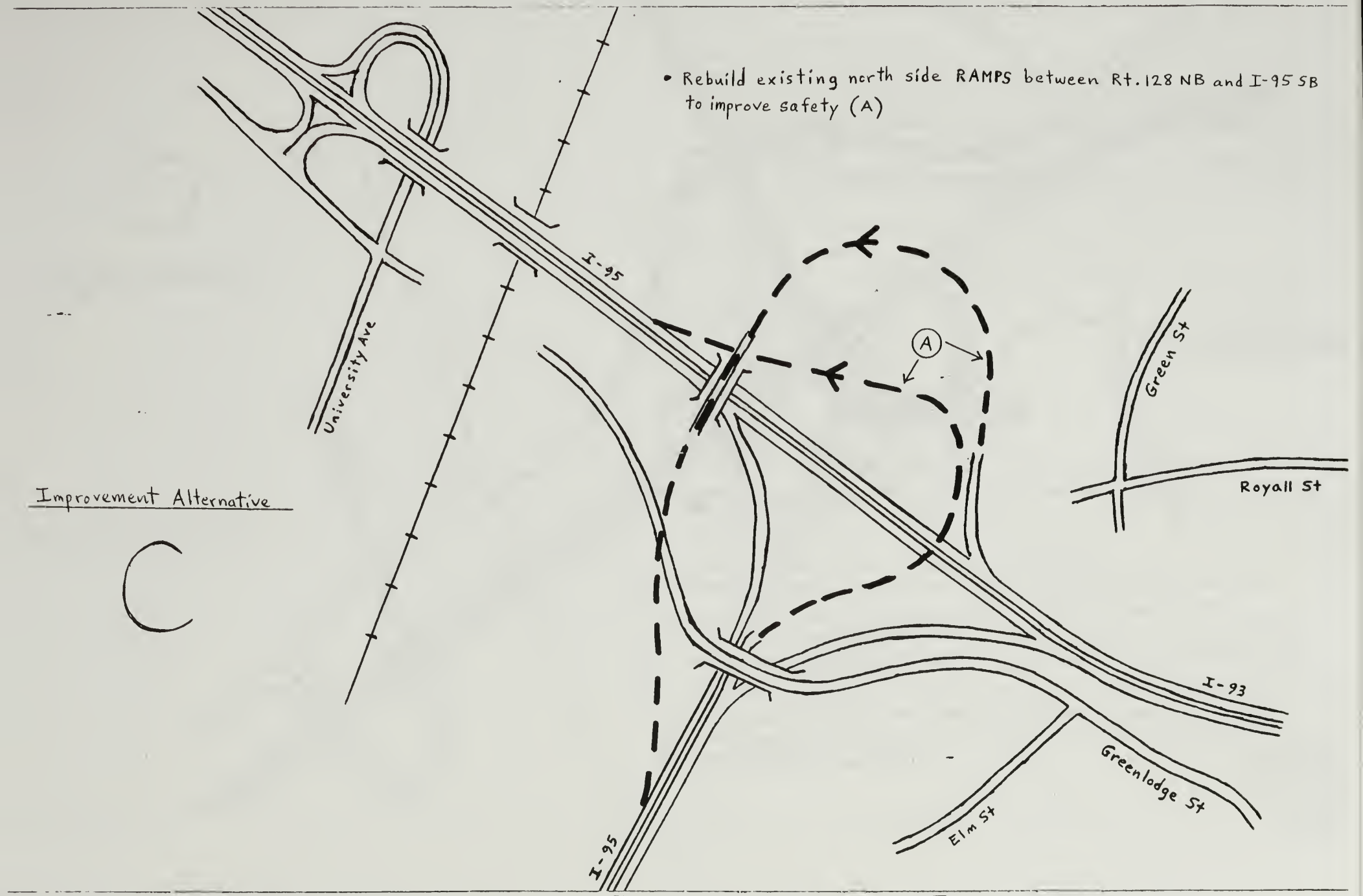
cc: Ken Miller, BTP&D, MHD


• Make Blue Hill Drive a cul-de-sac (A)
• Rebuild Rt. 128 SB to Blue Hill Drive OFF-RAMP as an ELEVATED facility (B), with ON and OFF-RAMPS at University Ave (C), and continuing across a rebuilt Greenlodge Street Bridge (D).
• Build an ON-RAMP from new RAMP to I-95 SB (E)
• Merge new RAMP with the I-95 NB to I-93 NB RAMP (F)
• Rebuild existing north side RAMPS between Rt. 128 NB and I-95 SB (G)
• Greenlodge St. east of I-95 would end at Elm St. (H)
A
B
C
D
E
F
G
H
I-95
University Ave
I-95
I-93
Green St
Royall St
Greenlodge St
Elm St

Improvement Alternative

A


• Make Blue Hill Drive a cul-de-sac (A)
• Rebuild Rt. 128 SB to Blue Hill Drive OFF-RAMP as an ELEVATED facility (B), with ON and OFF-RAMPS at University Ave (C), and continuing across a rebuilt Greenlodge Street Bridge (D).
• Rebuild I-95/I-93 interchange as a ROTARY (E)
• Roadway across rail line from ROTARY would be two-way. A jug-handle would connect the two-way roadway with University Ave (F), eliminating RAMPS between Rt. 128 NB and University Ave (G).
• Greenlodge St. east of I-95 would end at Elm St. (H).
A
B
C
D
E
F
G
H
I-95
I-93
University Ave
Green St
Royall St
Elm St
Greenlodge St
Improvement Alternative
B



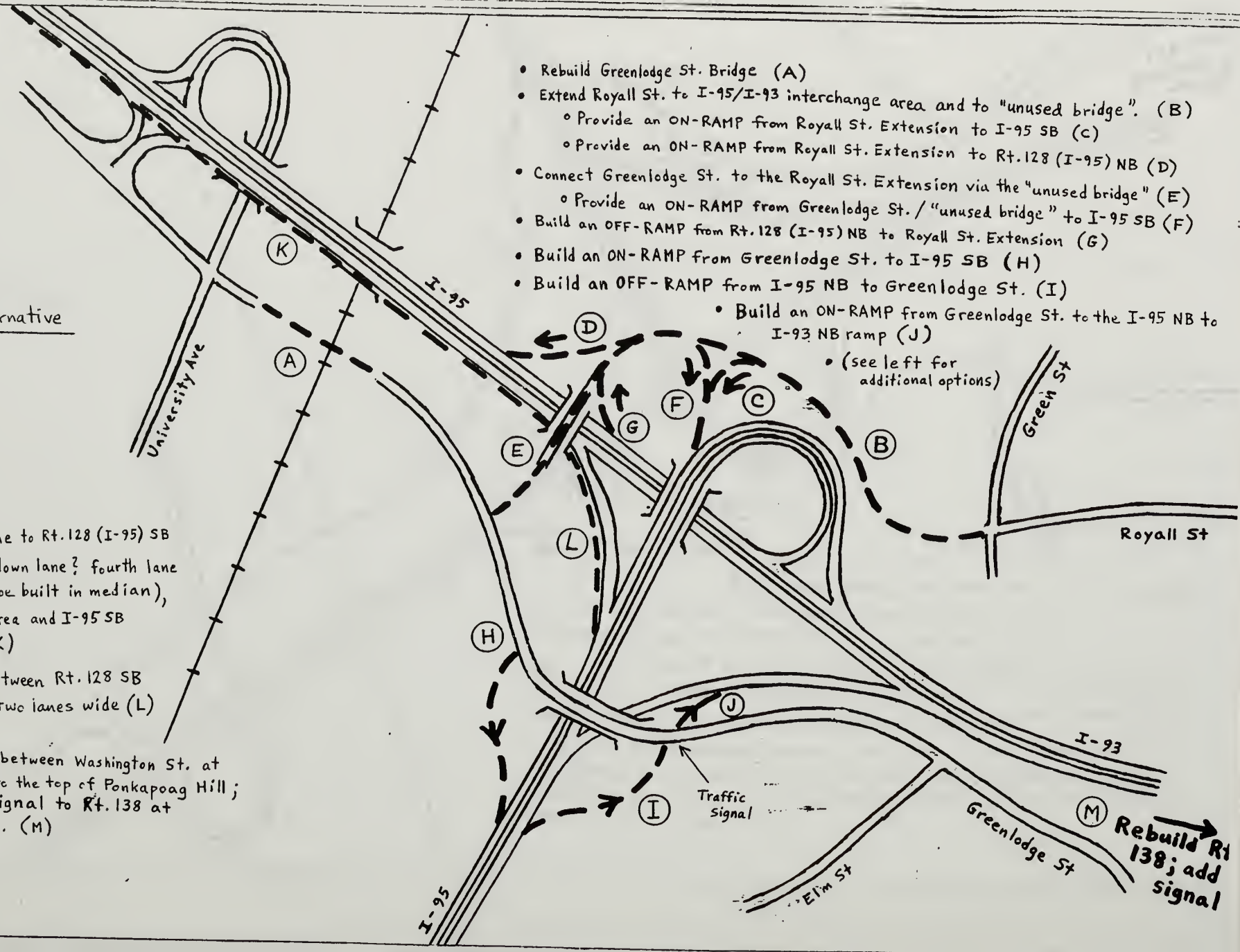

Improvement Alternative

C

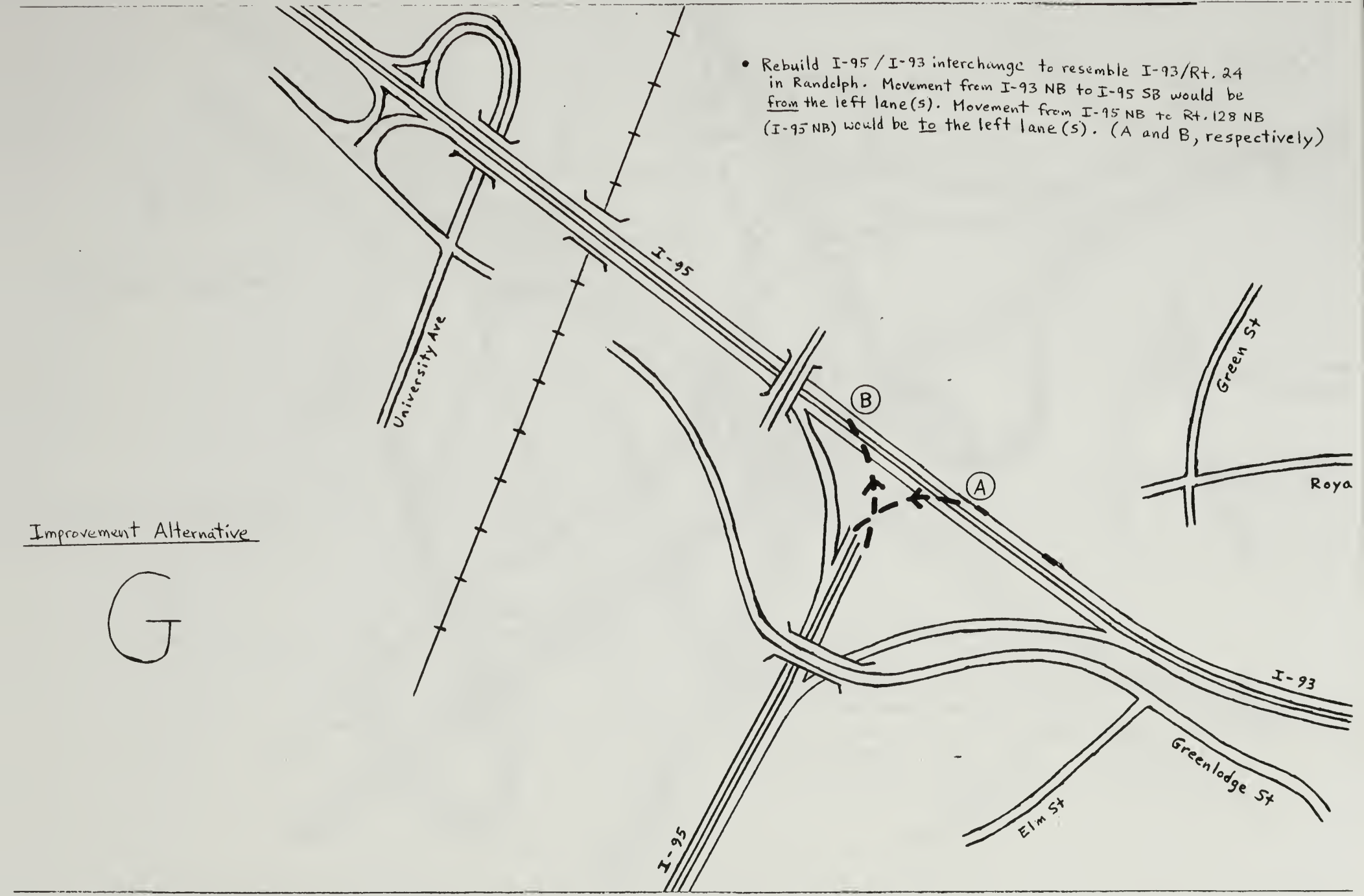
Improvement Alternative

F

- Add a fifth lane to Rt. 128 (I-95) SB (by using breakdown lane? fourth lane is assumed to be built in median), between Rest Area and I-95 SB OFF-RAMP (K)
- Make RAMP between Rt. 128 SB and I-95 SB two lanes wide (L)
- Rebuild Rt. 138 between Washington St. at Turnpike St. to the top of Ponkapoag Hill; add traffic signal to Rt. 138 at Greenlodge St. (M)

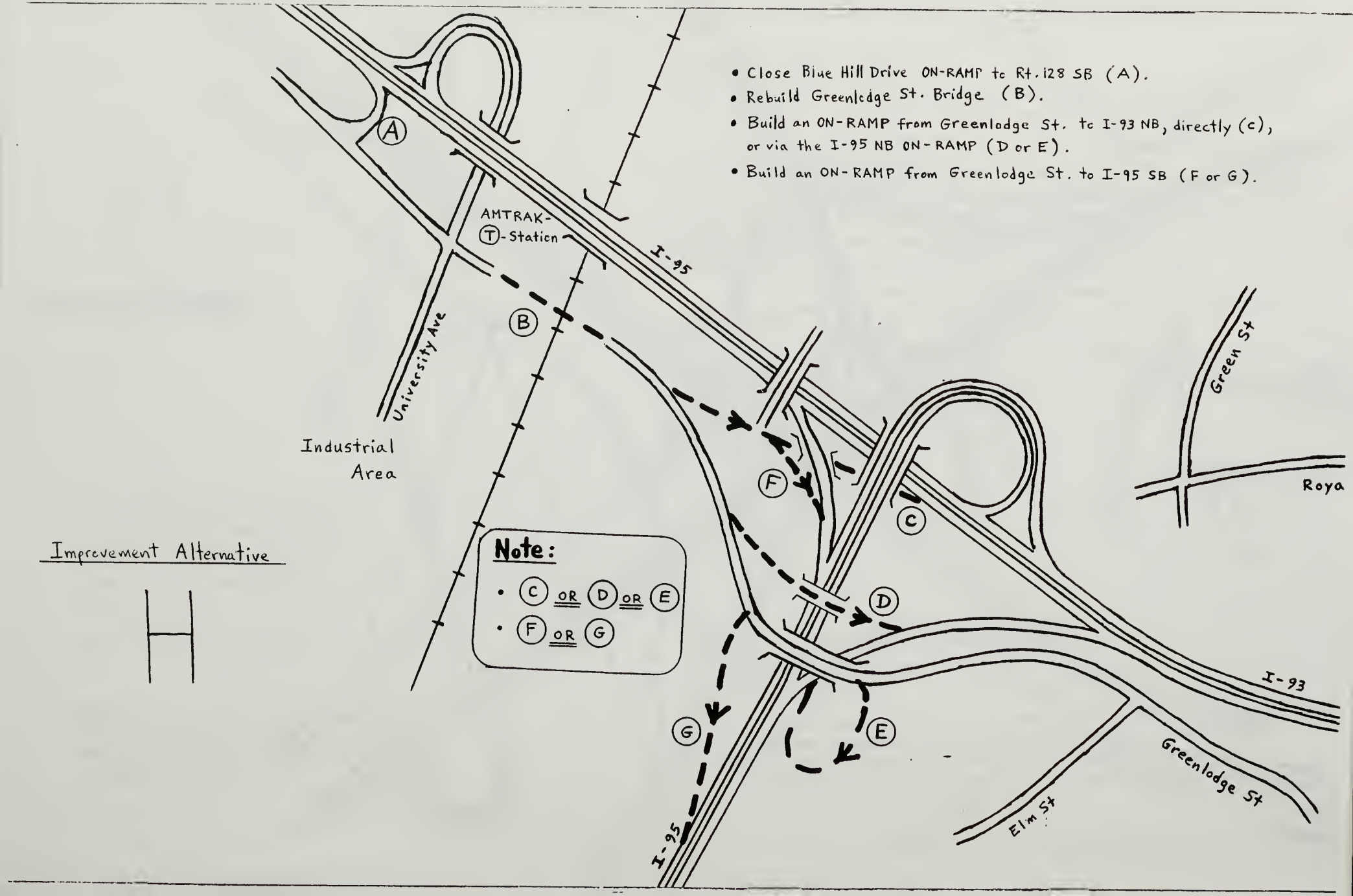


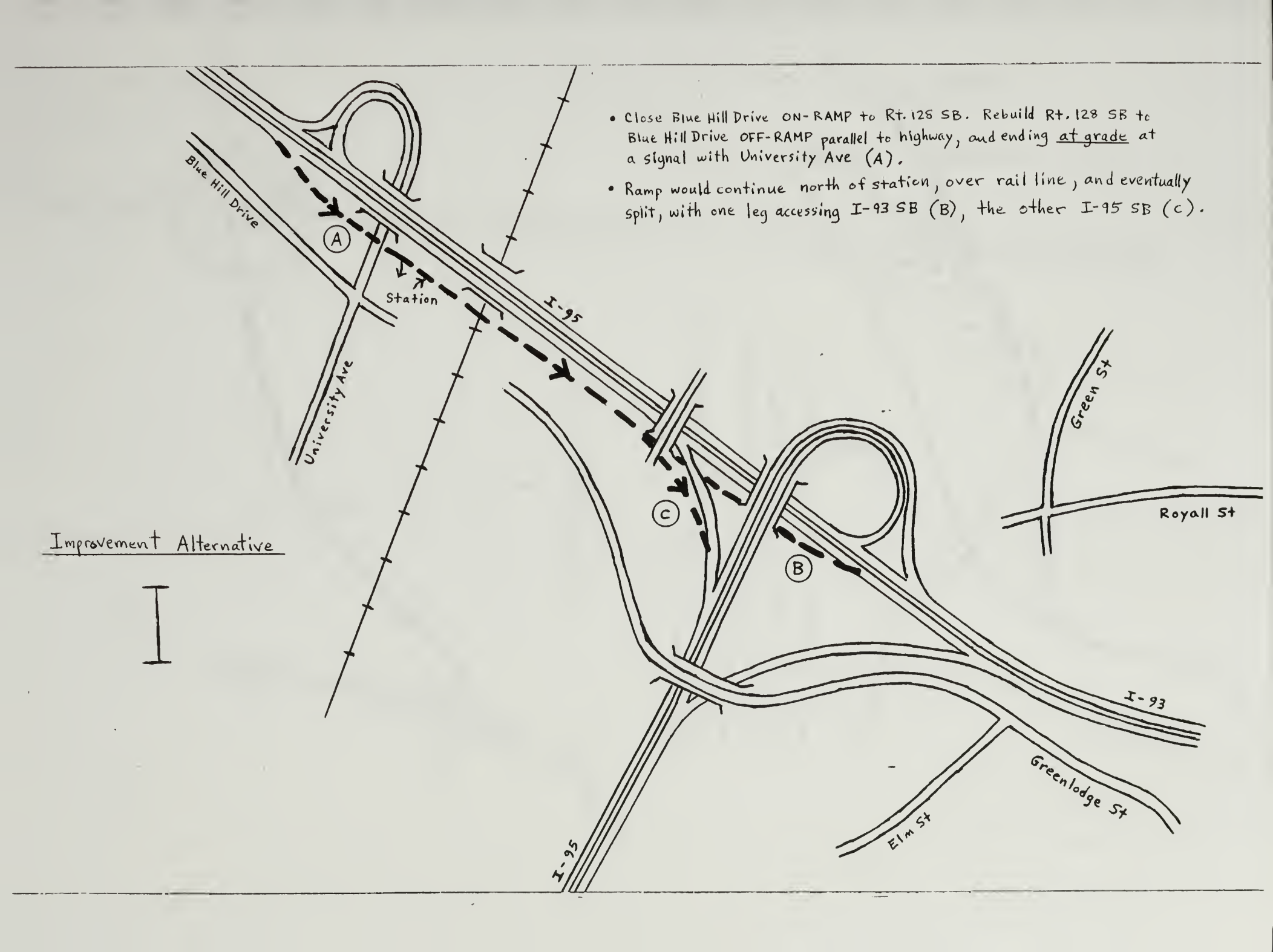

- Rebuild Greenlodge St. Bridge (A)
- Extend Royall St. to I-95/I-93 interchange area and to "unused bridge". (B)
  - Provide an ON-RAMP from Royall St. Extension to I-95 SB (C)
  - Provide an ON-RAMP from Royall St. Extension to Rt. 128 (I-95) NB (D)
- Connect Greenlodge St. to the Royall St. Extension via the "unused bridge" (E)
  - Provide an ON-RAMP from Greenlodge St. / "unused bridge" to I-95 SB (F)
- Build an OFF-RAMP from Rt. 128 (I-95) NB to Royall St. Extension (G)
- Build an ON-RAMP from Greenlodge St. to I-95 SB (H)
- Build an OFF-RAMP from I-95 NB to Greenlodge St. (I)
- Build an ON-RAMP from Greenlodge St. to the I-95 NB to I-93 NB ramp (J)
- (see left for additional options)

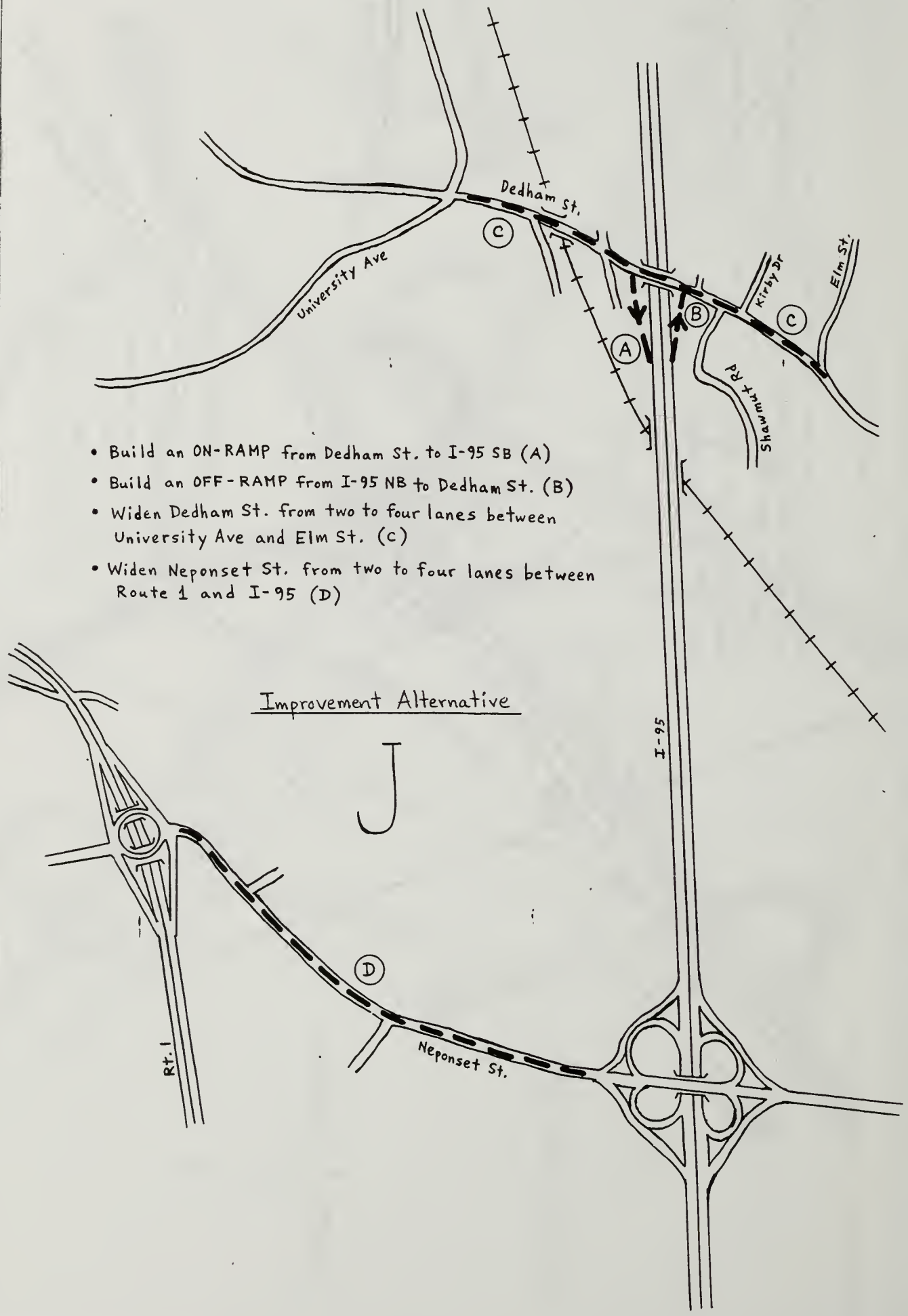

• Rebuild I-95 / I-93 interchange to resemble I-93/Rt. 24 in Randolph. Movement from I-93 NB to I-95 SB would be from the left lane(s). Movement from I-95 NB to Rt. 128 NB (I-95 NB) would be to the left lane(s). (A and B, respectively)
I-95
University Ave
B
A
Green St
Roya
I-93
Greenlodge St
Elm St
I-95

Improvement Alternative

G


• Close Blue Hill Drive ON-RAMP to Rt. 128 SB (A).
• Rebuild Greenlodge St. Bridge (B).
• Build an ON-RAMP from Greenlodge St. to I-93 NB, directly (c), or via the I-95 NB ON-RAMP (D or E).
• Build an ON-RAMP from Greenlodge St. to I-95 SB (F or G).
A
AMTRAK-
T-Station
I-95
B
University Ave
Industrial
Area
F
C
Green St
Roya
D
I-93
G
E
Greenlodge St
Elm St
I-95
Note:
• C OR D OR E
• F OR G
Improvement Alternative

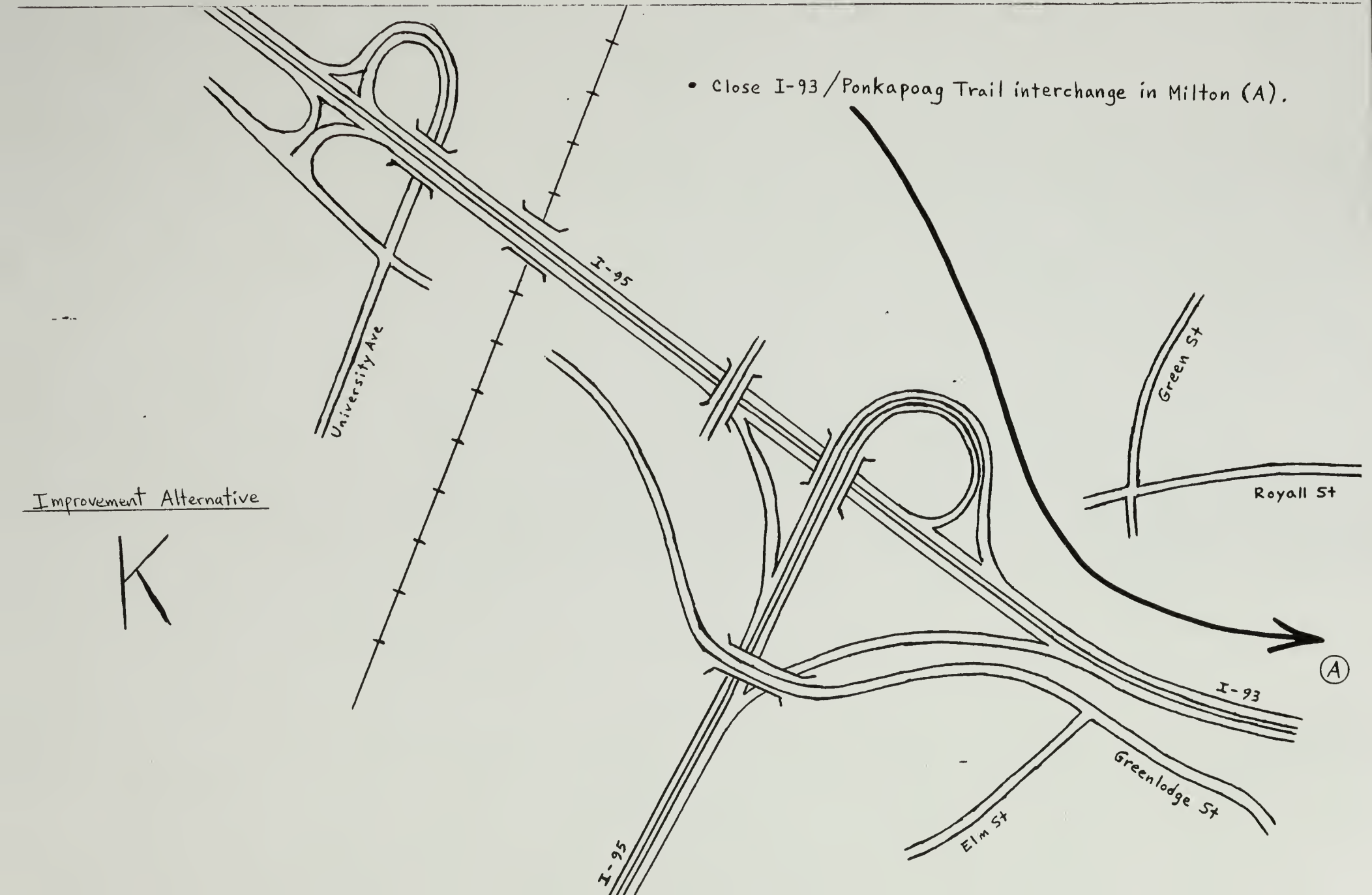

• Close Blue Hill Drive ON-RAMP to Rt. 128 SB. Rebuild Rt. 128 SB to Blue Hill Drive OFF-RAMP parallel to highway, and ending at grade at a signal with University Ave (A).
• Ramp would continue north of station, over rail line, and eventually split, with one leg accessing I-93 SB (B), the other I-95 SB (C).
Improvement Alternative
Blue Hill Drive
University Ave
Station
I-95
A
C
B
Green St
Royall St
I-93
Greenlodge St
Elm St
I-95




- Build an ON-RAMP from Dedham St. to I-95 SB (A)
- Build an OFF-RAMP from I-95 NB to Dedham St. (B)
- Widen Dedham St. from two to four lanes between University Ave and Elm St. (C)
- Widen Neponset St. from two to four lanes between Route 1 and I-95 (D)

## Improvement Alternative

# J


• Close I-93/Ponkapoag Trail interchange in Milton (A).
Improvement Alternative
K
I-95
University Ave
Green St
Royall St
I-93
A
Greenlodge St
Elm St
I-95

## APPENDIX B

**Traffic Forecasts**
(Technical memoranda)

B-1 Packages of Roadway Improvement Alternatives for Which Traffic Assignments Will Be Produced

B-2 Final 'Packages' of Roadway Improvement Alternatives for Which Traffic Assignments Will Be Produced

B-3 1995 and 2020 AM and PM Peak Hour Volume Comparisons: Volumes on Selected Study Area Roadways

B-4 1995 PM Peak Hour Counts and 2020 No-Build and Build PM Peak Hour Volumes (DRAFT)

B-5 Description of Traffic Impacts of Individual Roadway Improvement Elements

B-6 Traffic Model Calibration

# [APPENDIX B-1]

## MEMORANDUM

**TO:** **University Avenue / I-95 / Route 128 Station Study Project Files** **20 May, 1997**

**FROM:** **Robert Sievert**

**RE:** **"Packages" Of Roadway Improvement Alternatives For Which Traffic Assignments Will Be Produced**

### Future Base

1a. Run *without* the expanded Route 128 Station parking facility in place, for AM and PM peak hours, for the years 2005 and 2020.

1b. Run *with* the expanded Route 128 Station parking facility in place, for AM and PM peak hours, for the years 2005 and 2020.

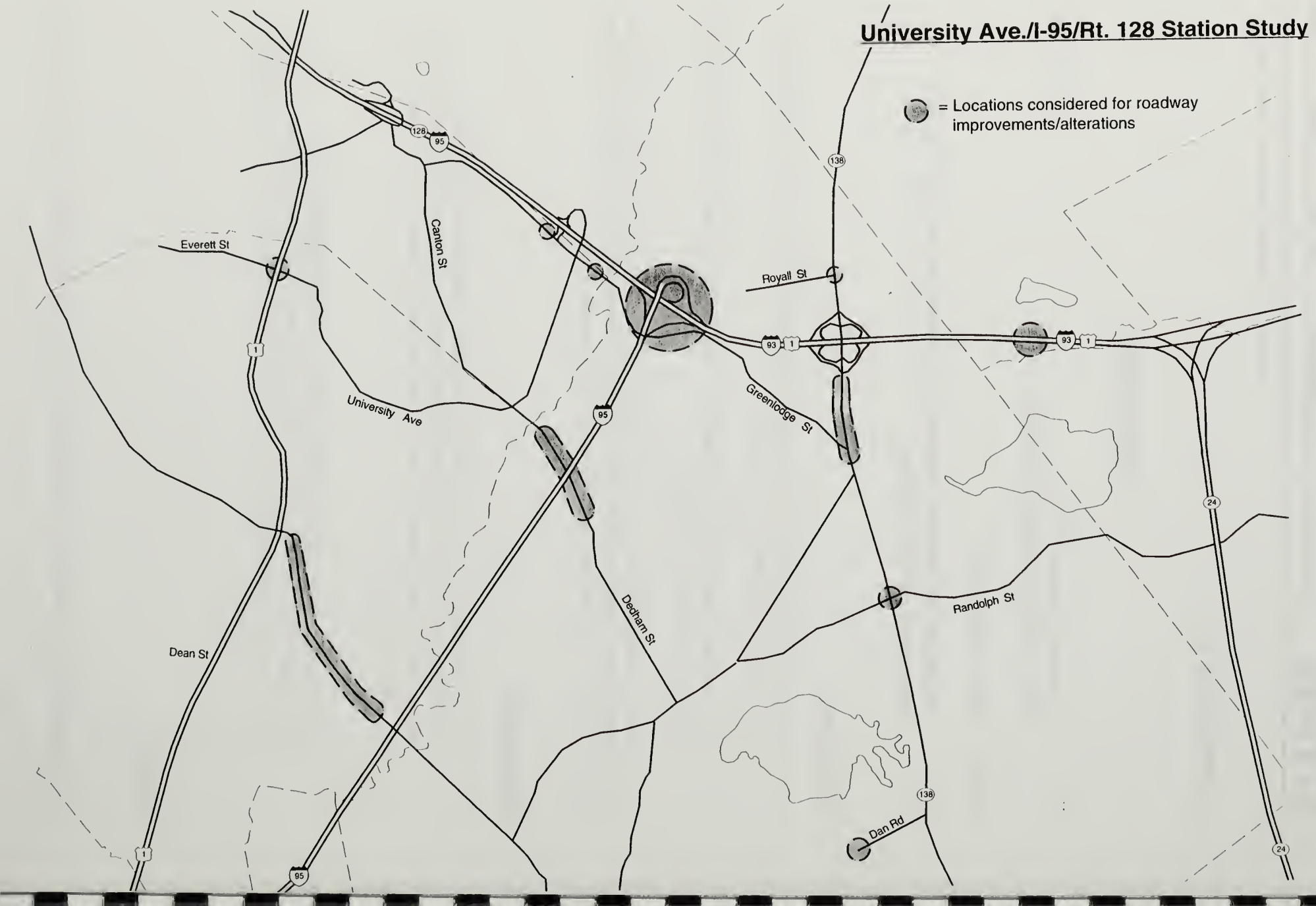
Other "background" roadway improvements will be assumed to be in place by 2005, e.g., the fourth lane in the median on Route 128 (I-95/I-93), University Avenue divided and widened from two to four lanes between Blue Hill Drive and Rosemont Road.

### Future Build

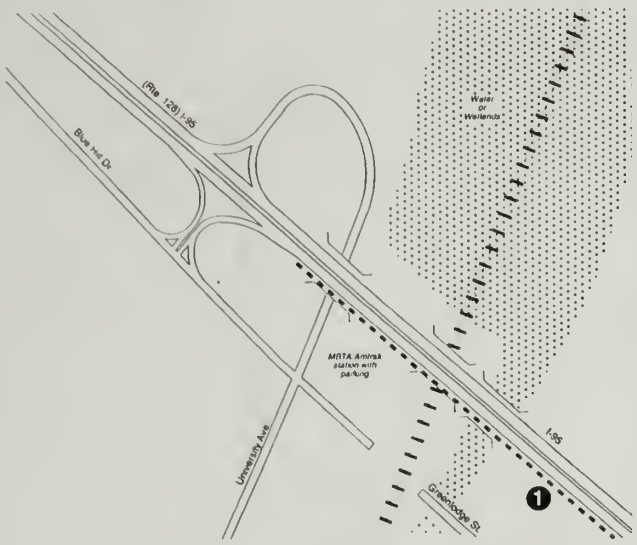
2. Four "Packages" (a, b, c, d) WITHOUT the Rebuilt Greenlodge Street Bridge.
All packages will be run for AM and PM peak hours, for the years 2005 and 2020, and will be run *with* the expanded Route 128 Station parking facility in place (see attached 11" x 17" graphics).

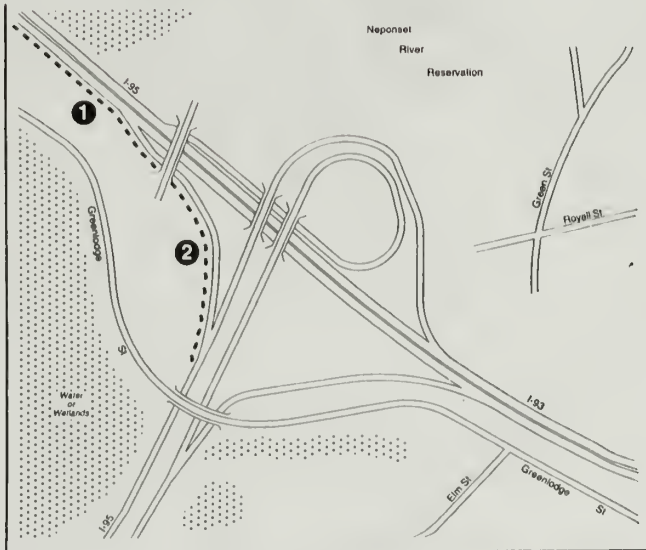
3. Five "Packages" (a, b, c, d, e) WITH the Rebuilt Greenlodge Street Bridge.
All packages will be run for AM and PM peak hours, for the years 2005 and 2020, and will be run *with* the expanded Route 128 Station parking facility in place (see attached 11" x 17" graphics).

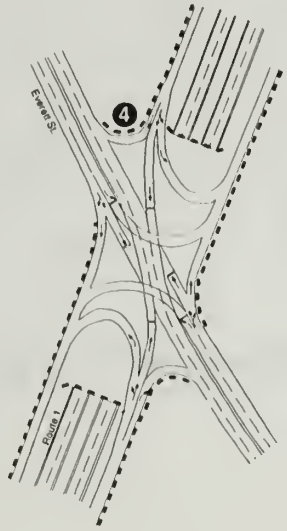
RES/res


University Ave./I-95/Rt. 128 Station Study
= Locations considered for roadway improvements/alterations
Everett St
Canton St
University Ave
Dean St
Dedham St
Royall St
Greenlodge St
Randolph St
Dan Rd
128
95
138
93
1
24

# WITHOUT Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 2a



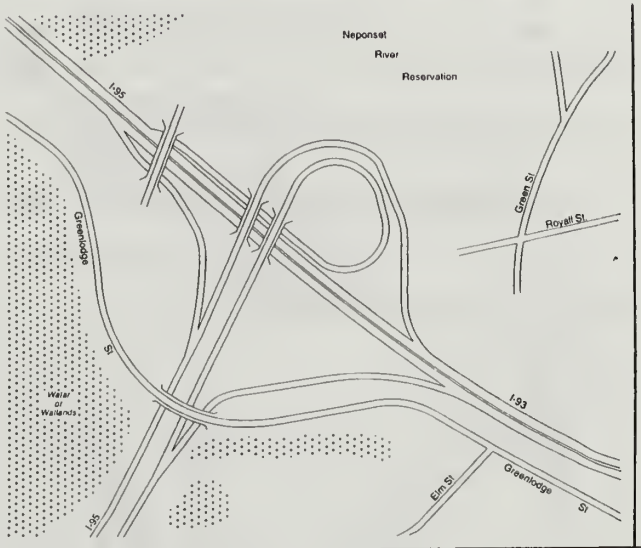



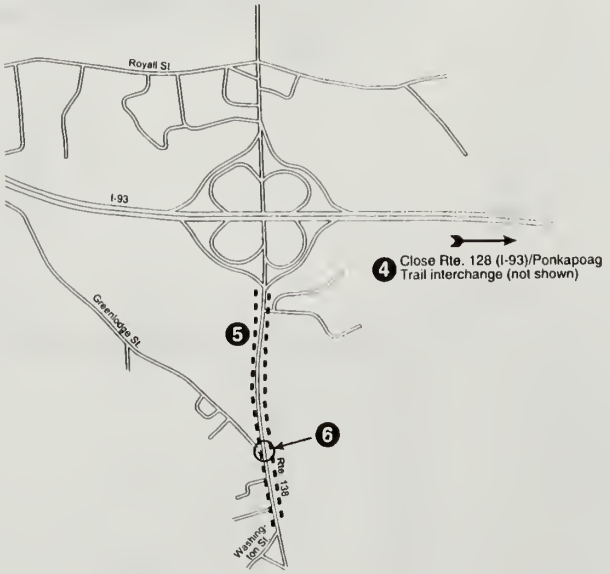


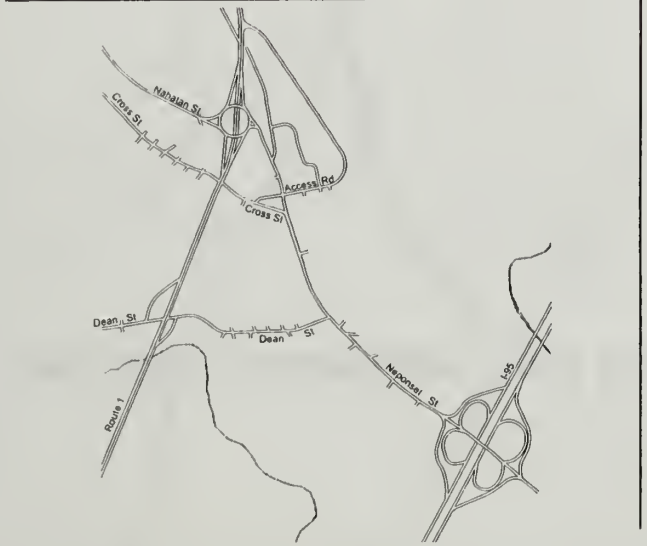

**WITHOUT Greenlodge Street Bridge: "PACKAGE" 2a:**

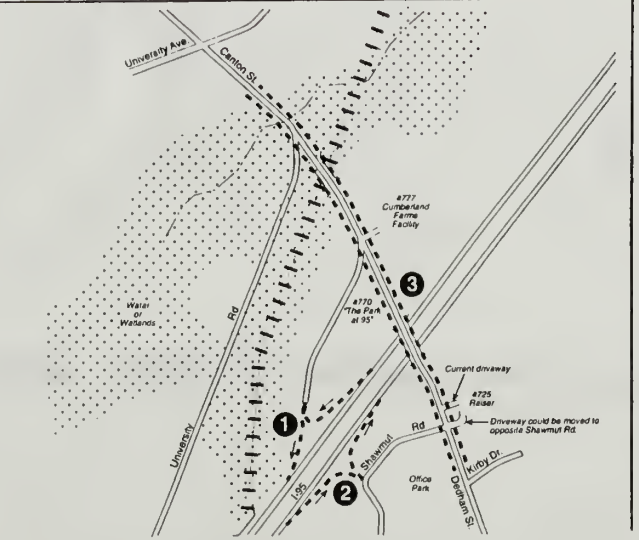
1. Use the breakdown lane on Route 128 (I-95) SB between the Blue Hill Drive ON-RAMP and the OFF-RAMP to I-95 SB as a weaving/ acceleration/deceleration lane .
2. Make the OFF-RAMP between Route 128 and I-95 SB two lanes (i.e., the weaving/accel/decel lane proposed above would continue into a second lane on the OFF-RAMP)
3. Add capacity improvements to the Route 138 at Royall Street intersection.
4. Grade-separate Route 1 at Everett Street (Norwood), i.e., create a Single Point Urban Interchange (SPUI)
5. Add the East-West connector road between Pleasant Street and Dan Road (Canton)

# WITHOUT Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 2b



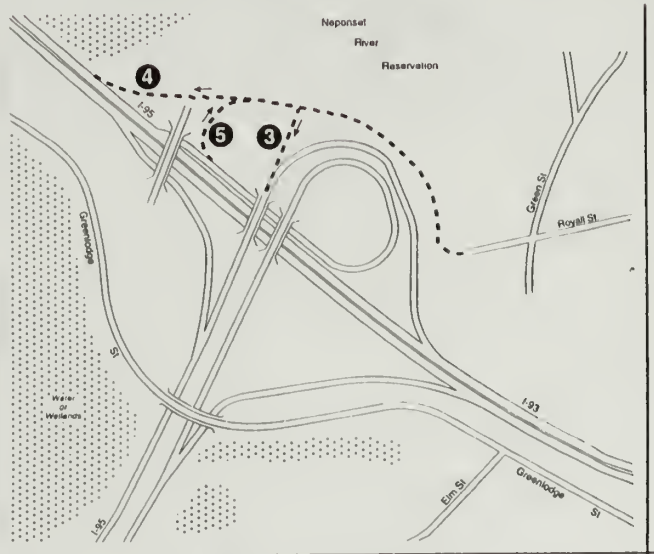



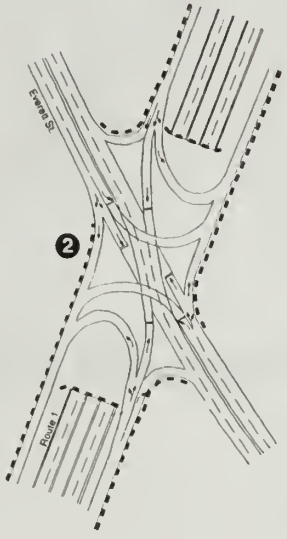




**WITHOUT Greenlodge Street Bridge: "PACKAGE" 2b:**

1. Add an ON-RAMP from Dedham Street to I-95 SB (Canton). This could be either an expansion/extension of the driveway at 770 Dedham Street ("The Park at 95"), just opposite the Cumberland Farms facility at 777 Dedham Street, with both an ON and OFF-RAMP connection with I-95, or it could be a simple slip ramp TO I-95 from a new intersection with Dedham Street.
2. Add an OFF-RAMP from I-95 NB to Dedham Street. This could be either an ON and OFF-RAMP connection between I-95 NB and the roadway in the Shawmut Road Office Park, or it could be a simple slip ramp FROM I-95 to a new intersection with Dedham Street.
3. Widen Dedham Street between University Avenue and Kirby Drive, either from two to four lanes, or by adding exclusive left-turn lanes at the various plant and office driveways
4. Close the Route 128 (I-93)/Ponkapoag Trail interchange (Milton)
5. Expand Route 138 from two to four lanes between Washington Street and the Route 128 (I-93) interchange (Canton)
6. Add a traffic signal at Route 138 at Greenlodge Street (Canton)

# WITHOUT Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 2c

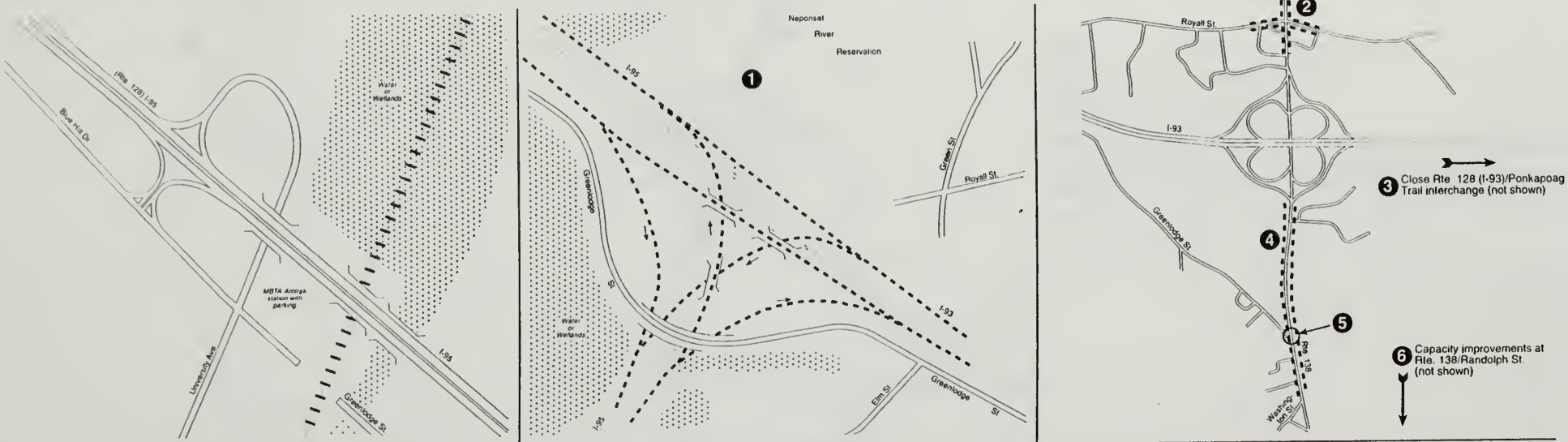




**WITHOUT Greenlodge Street Bridge: "PACKAGE" 2c:**

1. Widen Neponset Street between I-95 and Route 1, either from two to four lanes, or by adding exclusive left-turn lanes at key side street intersections (Norwood)
2. Grade-separate Route 1 at Everett Street (Norwood), i.e., create a Single Point Urban Interchange (SPUI)
3. Link Royall Street to I-95 SB
4. Link Royall Street to Route 128 (I-95) NB
5. Add an OFF-RAMP from I-95 NB to Royall Street

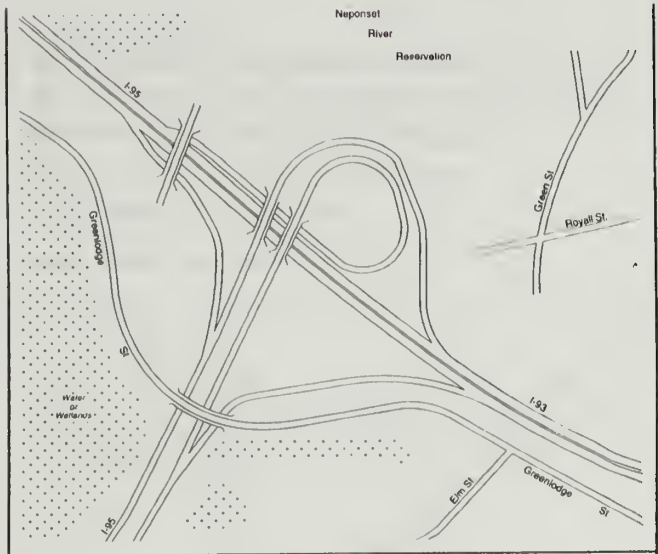
# WITHOUT Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 2d




**WITHOUT Greenlodge Street Bridge: "PACKAGE" 2d:**

1. Rebuild the I-95/I-93 interchange, with all highway-to-highway connections on the sout side, similar to the I-93/Route 24 interchange in Randolph.
2. Add capacity improvements to the Route 138 at Royall Street intersection
3. Close the Route 128 (I-93)/Ponkapoag Trail interchange (Milton)
4. Expand Route 138 from two to four lanes between Washington Street and the Route 128 (I-93) interchange (Canton)
5. Add a traffic signal at Route 138 at Greenlodge Street (Canton)
6. Add capacity improvements to the Route 138 at Randolph Street intersection
7. Add an ON-RAMP from Dedham Street to I-95 SB (Canton). This could be either an expansion/extension of the driveway at 770 Dedham Street ("The Park at 95"), just opposite the Cumberland Farms facility at 777 Dedham Street, with both an ON and OFF-RAMP connection with I-95, or it could be a simple slip ramp TO I-95 from a new intersection with Dedham Street.
8. Add an OFF-RAMP from I-95 NB to Dedham Street. This could be either an ON anc OFF-RAMP connection between I-95 NB and the roadway in the Shawmut Road Offic Park, or it could be a simple slip ramp FROM I-95 to a new intersection with Dedham Street.
9. Widen Dedham Street between University Avenue and Kirby Drive, either from two t four lanes, or by adding exclusive left-turn lanes at the various plant end office driveway

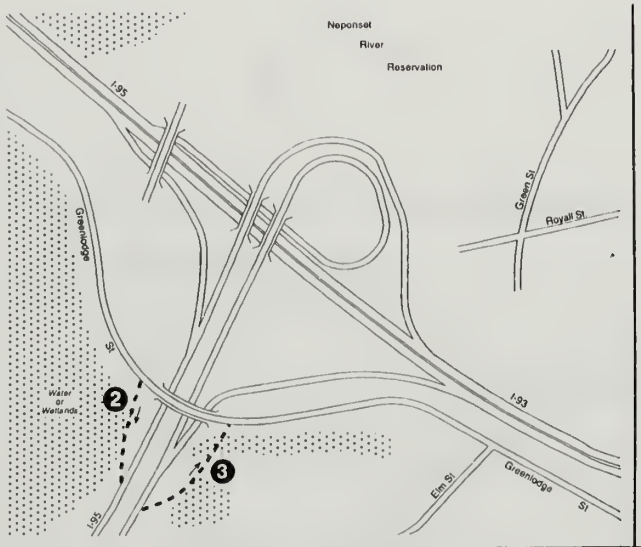
# WITH Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 3a



**WITH Greenlodge Street Bridge: "PACKAGE" 3a**

1 No roadway improvements EXCEPT for a rebuilt Greenlodge Street Bridge.

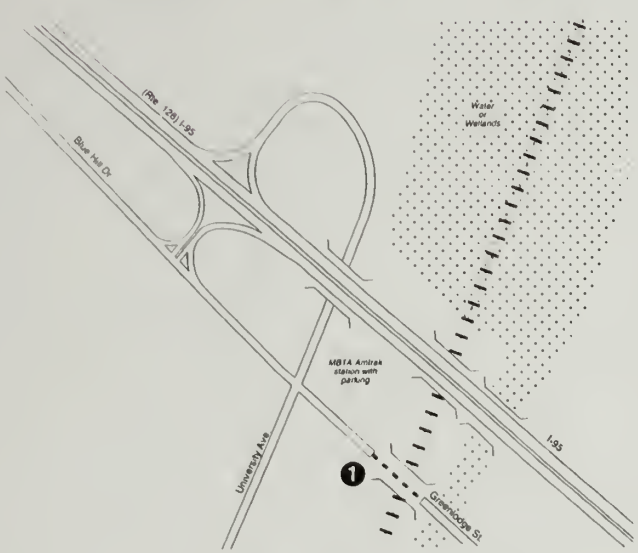
# WITH Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 3b

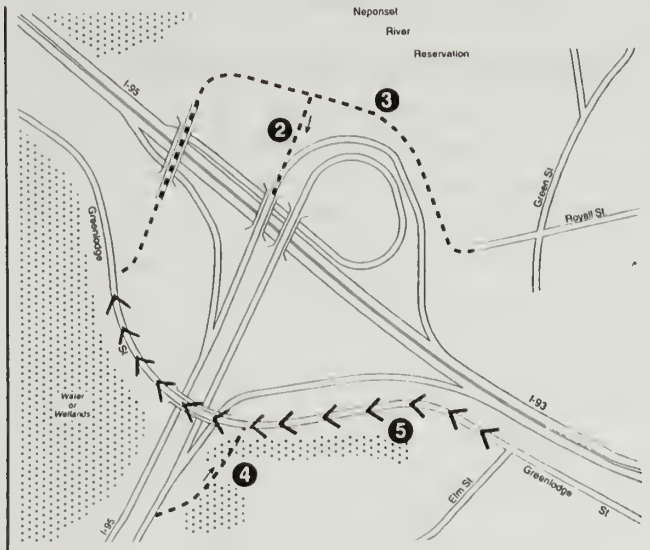


**WITH Greenlodge Street Bridge: "PACKAGE" 3b**

1. Rebuild the Greenlodge Street Bridge
2. Add an ON-RAMP from Greenlodge Street to I-95 SB
3. Add an OFF-RAMP from I-95 NB to Greenlodge Street
4. Add capacity improvements to the Route 138 at Royall Street intersection
5. Add the East-West connector road between Pleasant Street and Dan Road (Canton)

# WITH Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 3c

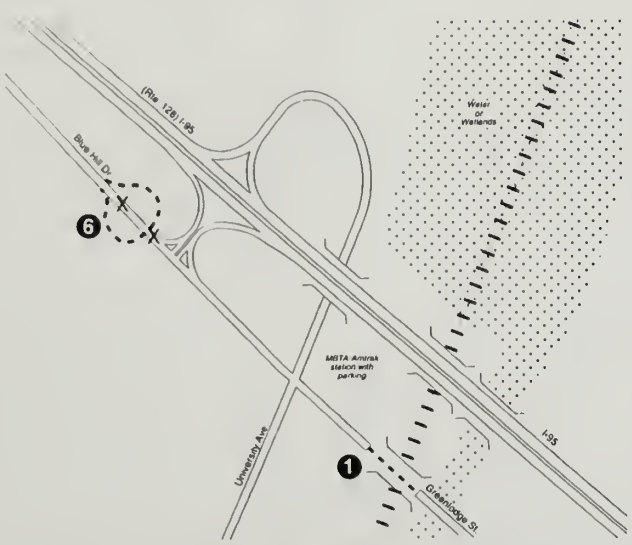


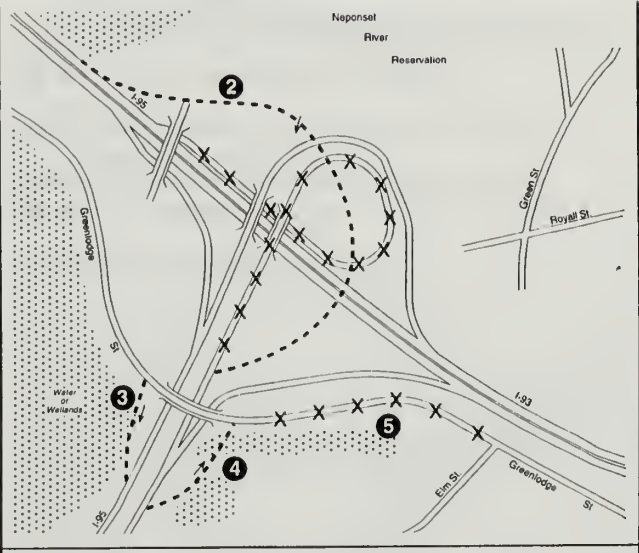



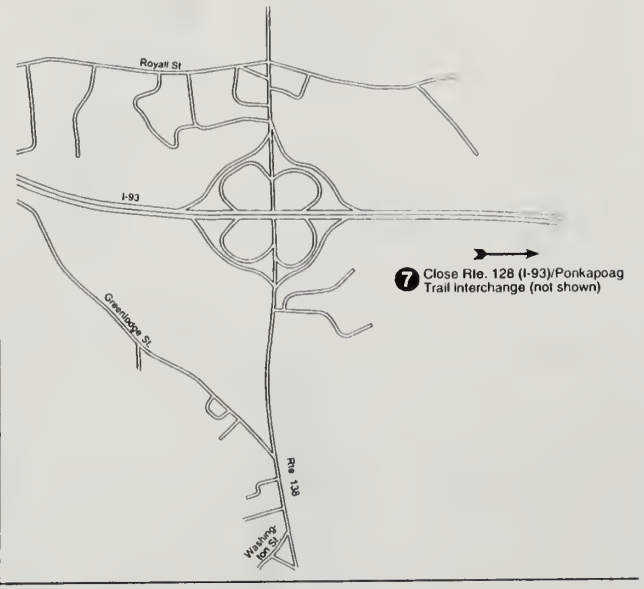
**WITH Greenlodge Street Bridge: "PACKAGE" 3c:**

1. Rebuild the Greenlodge Street Bridge
2. Add an ON-RAMP from Greenlodge Street to I-95 SB, via the "Unused Bridge" over Route 128
3. Link Greenlodge Street and Royall Street via the "Unused Bridge" over Route 128
4. Add an OFF-RAMP from I-95 NB to Greenlodge Street
5. Make Greenlodge Street *one-way* WB from Elm Street to the proposed new ramp between I-95 NB and Greenlodge Street, then *two-way* between this ramp and University Avenue.
6. Expand Route 138 from two to four lanes between Washington Street and the Route 128 (I-93) interchange (Canton)
7. Add a traffic signal at Route 138 at Greenlodge Street (Canton)

# WITH Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 3d



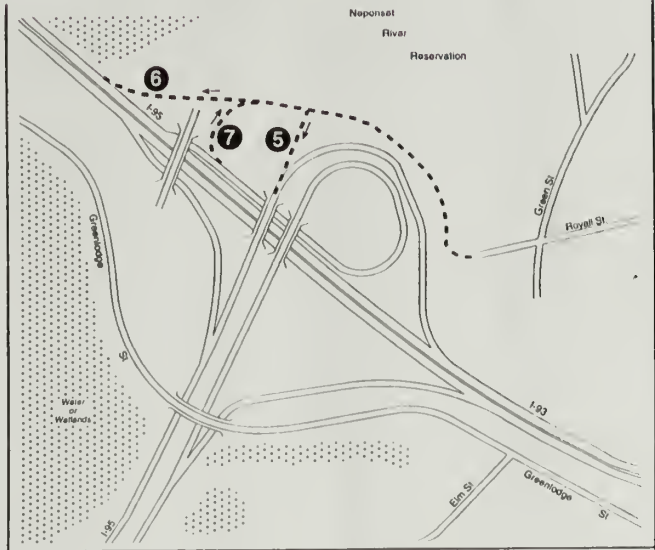



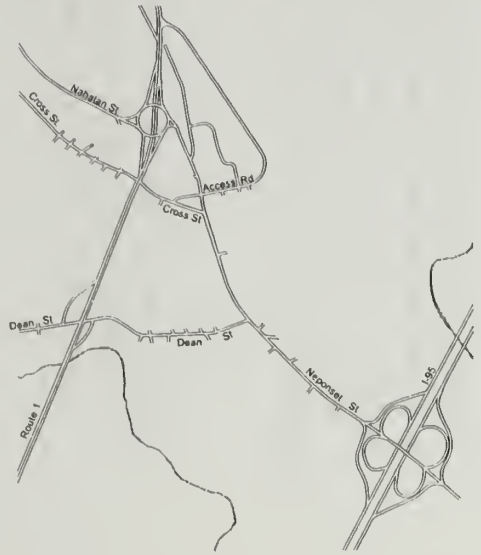



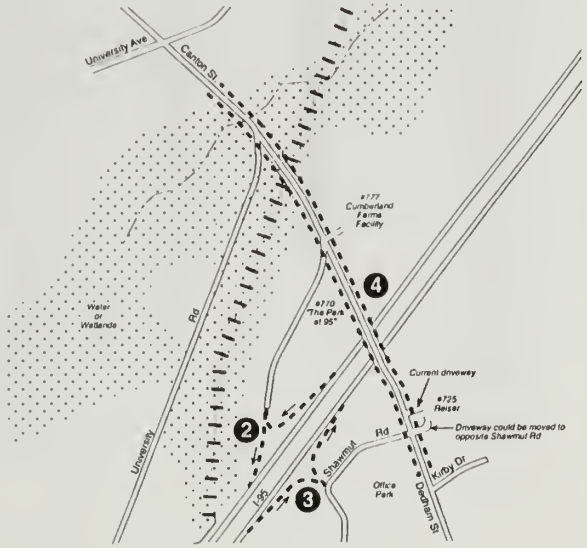
**WITH Greenlodge Street Bridge: "PACKAGE" 3d:**

1. Rebuild the Greenlodge Street Bridge
2. Rebuild ramp between I-95 NB and Route 128 (I-95) NB as a fly-over ramp
3. Add an ON-RAMP from Greenlodge Street to I-95 SB
4. Add an OFF-RAMP from I-95 NB to Greenlodge Street
5. End Greenlodge Street at Elm Street, i.e., thus disconnecting Greenlodge Street, and Route 138, from the I-95 interchange area and from the Route 128 Station area.
6. Make Blue Hill Drive a cul-de-sac west of the Route 128 SB ramps
7. Close the Route 128 (I-93)/Ponkapoag Trail interchange (Milton)

# WITH Greenlodge Street Bridge: Roadway Improvements, "PACKAGE" 3e






**WITH Greenlodge Street Bridge: "PACKAGE" 3e:**

1. Rebuild the Greenlodge Street Bridge
2. Add an ON-RAMP from Dedham Street to I-95 SB (Canton). This could be either an expansion/extension of the driveway at 770 Dedham Street ("The Park at 95"), just opposite the Cumberland Farms facility at 777 Dedham Street, with both an ON and OFF-RAMP connection with I-95, or it could be a simple slip ramp TO I-95 from a new intersection with Dedham Street.
3. Add an OFF-RAMP from I-95 NB to Dedham Street. This could be either an ON and OFF-RAMP connection between I-95 NB and the roadway in the Shawmut Road Office Park, or it could be a simple slip ramp FROM I-95 to a new intersection with Dedham Street.
4. Widen Dedham Street between University Avenue and Kirby Drive, either from two to four lanes, or by adding exclusive left-turn lanes at the various plant and office driveways
5. Link Royall Street to I-95 SB
6. Link Royall Street to Route 128 (I-95) NB
7. Add an OFF-RAMP from I-95 NB to Royall Street

# [APPENDIX B-2]

## MEMORANDUM

**TO:** **University Avenue / I-95 / Route 128 Station Study Project Files** **16 September, 1997**

**FROM:** **Robert Sievert**

**RE:** **Final "Packages" Of Roadway Improvement Alternatives For Which Traffic Assignments Will Be Produced**

Keep the original "packages" (1 a, b; 2 a-d; and, 3 a-e) as presented in the 20 May CTPS memorandum and at the Route 128 Station Task Force meeting, while adding five variations (3 f-i):

**Variations of Previously Presented Improvement Alternatives "Packages":**
**(All WITH a rebuilt Greenlodge Street Bridge)**

**"Package" 3 f** :

-- Identical to "Package" **2 a**, but WITH a rebuilt Greenlodge Street Bridge.

**"Package" 3 g** :

-- A variation of "Package" **3 b**, but end the rebuilt Greenlodge Street Bridge at the new parking facility (zone 1), and not at University Avenue (i.e., no through traffic between Blue Hill Drive and Greenlodge Street except for emergency vehicles)

**"Package" 3 h** :

-- Another variation of "Package" **3 b**, but end the rebuilt Greenlodge Street Bridge at University Avenue. East-west through traffic at the intersection (between Blue Hill Drive and Greenlodge Street) would not be allowed (emergency vehicles excepted), only left and right turns to and from University Avenue would be allowed. North-south traffic on University Avenue, however, could still make all turns.

**"Package" 3 i** :

-- A variation of "Package" **3 e**. However, allow no east-west traffic between Canton Street and Dedham Street, only left and right turns to and from University Avenue (emergency vehicles excepted). North-south traffic on University Avenue, however, could still make all turns.

**"Package" 3 j** :

-- A variation of "Package" ~~3 d~~ 3b. Just east of the rebuilt bridge, add a one-way link from Greenlodge Street to Route 128 SB (to I-93 NB), between the two I-95 ramps. Also, close the ON-RAMP from Blue Hill Drive to Route 128 (I-95) SB. This removes the weaving section on 128 SB between the Blue Hill Drive ramps and I-95.

# [APPENDIX B-3]

## MEMORANDUM

**TO:** **University Avenue / I-95 / Route 128 Station Task Force** **21 October, 1997**

**FROM:** **Robert Sievert**

**RE:** **1995 and 2020 AM and PM Peak Hour Volume Comparisons: Volumes On Selected Study Area Roadways**

The attached table and map summarize traffic volumes throughout the University Avenue/I-95/Route 128 Station study area for Base Year 1995 and 2020 AM and PM peak hours. For each peak hour, link volumes are displayed as 1995 balanced counts, and as traffic forecasts for 2020, without and with the new Route 128 Station parking garage in place. The 2020 forecast volumes reflect anticipated changes in employment and residential households from Base Year levels, internal as well as external to the study area.

Highlights of the observed changes in link volumes include (refer to boxed cells in table):

Between 1995 and 2020:

- Overall traffic growth on link volumes ranges from:
  - AM Peak Hour: -10 to +1530 (highways and ramps)
  - PM Peak Hour: -30 to +1400 (highways and ramps)
  - AM Peak Hour: -100 to +970 (local roadways)
  - PM Peak Hour: -10 to +750 (local roadways)
- Increases in traffic in the Royall Street/Route 138 area:
  - Royall Street WB, west of Route 138 in the AM peak hour (Location 35)
  - Royall Street EB, west of Route 138 in the PM peak hour (Location 35)
  - Route 138 NB, south of Royall Street in the AM peak hour (Location 28)
  - Route 138 SB, south of Royall Street in the PM peak hour (Location 28)

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Between 2020 without and with the new MBTA/AMTRAK parking garage:

- Highways and Ramps:

  (AM Peak Hour)
  - Route 128 NB volumes increase up to the University Avenue exit (Locations 5, 4, 3)
  - Route 128 SB volumes increase up to the Blue Hill Drive exit (Locations 1, 2)
  - Increases on I-95 NB, and on the I-95 to Route 128 NB ramp (Locations 7, 6, 12)
  - Increase on Route 128 SB off-ramp to Blue Hill Drive (Location 13)

  These volume increases represent traffic bound for the University Avenue area.

  (PM Peak Hour)
  - Route 128 NB volumes increase away from the University Avenue exit (Locations 2, 1)
  - Route 128 SB volumes increase away from the Blue Hill Drive exit (Locations 3, 4, 5)
  - Increases on I-95 SB, and on the Route 128 SB to I-95 SB ramp (Locations 12, 6, 7)
  - Increase on the Blue Hill Drive to Route 128 SB on-ramp (Location 13)

  These volume increases represent traffic leaving the University Avenue area.

- Local Roadways:

  (AM Peak Hour)
  - Increases in traffic approaching the new parking garage at the University Avenue/Blue Hill Drive intersection (Locations 16, 15, 14)
  - Growth in traffic on Pleasant Street NB and Dedham Street NB (Locations 37, 36, 26, 25, 24)
  - Decreases in traffic on Greenlodge Street WB due to banning of parking on east side of new station (Location 40)

  (PM Peak Hour)
  - Increases in traffic away from the new parking garage at the University Avenue/Blue Hill Drive intersection (Locations 16, 15, 14)
  - Decreases in traffic on Greenlodge Street EB due to banning of parking on east side of new station (Location 40)

RES/res

## UNIVERSITY AVENUE / I-95 / ROUTE 128 STATION STUDY

## 1995 and 2020 AM and PM Peak Hour Volume Comparisons: Volumes on Selected Roadways

| (For numbered location refer to attached map) HIGHWAYS | | AM Peak Hour | | | | | | | PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | Change from 1995 Balanced Counts | | 2020 WITH New Garage | Change from 2020 WITHOUT New Parking | | 1995 Balanced Counts | 2020 WITHOUT New Garage | Change from 1995 Balanced Counts | | 2020 WITH New Garage | Change from 2020 WITHOUT New Parking | |
| | | | | Volume | Percent | | Volume | Percent | | | Volume | Percent | | Volume | Percent |
| Route 128 (I-95/I-93) | | | | | | | | | | | | | | | |
| 1 - n. of Route 1 | NB | 7800 | 9330 | 1530 | 20% | 9360 | 30 | 0% | 6130 | 7530 | 1400 | 23% | 7680 | 150 | 2% |
| | SB | 5340 | 6440 | 1100 | 21% | 6590 | 150 | 2% | 6470 | 7590 | 1120 | 17% | 7630 | 40 | 1% |
| 2 - n. of University Ave/ Blue Hill Drive | NB | 7610 | 8850 | 1240 | 16% | 8880 | 30 | 0% | 5870 | 7100 | 1230 | 21% | 7290 | 190 | 3% |
| | SB | 5160 | 6190 | 1030 | 20% | 6420 | 230 | 4% | 6640 | 7590 | 950 | 14% | 7600 | 10 | 0% |
| 3 - n. of I-95 | NB | 8240 | 9590 | 1350 | 16% | 10140 | 550 | 6% | 5690 | 6620 | 930 | 16% | 6620 | 0 | 0% |
| | SB | 4910 | 5850 | 940 | 19% | 5830 | -20 | 0% | 7520 | 8690 | 1170 | 16% | 9160 | 470 | 5% |
| 4 - n. of Route 138 | NB | 7780 | 8660 | 880 | 11% | 9060 | 400 | 5% | 7150 | 8170 | 1020 | 14% | 8150 | -20 | 0% |
| | SB | 6740 | 7840 | 1100 | 16% | 7770 | -70 | -1% | 7240 | 8100 | 860 | 12% | 8490 | 390 | 5% |
| 5 - s. of Ponkapoag Trail | NB | 7940 | 8820 | 880 | 11% | 9120 | 300 | 3% | 6520 | 7250 | 730 | 11% | 7260 | 10 | 0% |
| | SB | 5980 | 6700 | 720 | 12% | 6640 | -60 | -1% | 7820 | 8780 | 960 | 12% | 9110 | 330 | 4% |
| I-95 | | | | | | | | | | | | | | | |
| 6 - s. of Route 128 | NB | 4900 | 5960 | 1060 | 22% | 6080 | 120 | 2% | 2860 | 3350 | 490 | 17% | 3360 | 10 | 0% |
| | SB | 2600 | 3040 | 440 | 17% | 3070 | 30 | 1% | 4600 | 5480 | 880 | 19% | 5560 | 80 | 1% |
| 7 - s. of Neponset Street | NB | 5130 | 6350 | 1220 | 24% | 6480 | 130 | 2% | 2620 | 3190 | 570 | 22% | 3200 | 10 | 0% |
| | SB | 2560 | 3040 | 480 | 19% | 3070 | 30 | 1% | 4670 | 5660 | 990 | 21% | 5810 | 150 | 3% |
| Route 1 | | | | | | | | | | | | | | | |
| 8 - n. of Route 128 | NB | 1800 | 1810 | 10 | 1% | 1820 | 10 | 1% | 1740 | 1780 | 40 | 2% | 1810 | 30 | 2% |
| | SB | 1370 | 1360 | -10 | -1% | 1380 | 20 | 1% | 2440 | 2410 | -30 | -1% | 2450 | 40 | 2% |
| 9 - s. of Route 128 | NB | 2020 | 2300 | 280 | 14% | 2350 | 50 | 2% | 2200 | 2430 | 230 | 10% | 2440 | 10 | 0% |
| | SB | 1690 | 1680 | -10 | -1% | 1700 | 20 | 1% | 2430 | 2550 | 120 | 5% | 2620 | 70 | 3% |
| 10 - s. of Everett Street | NB | 2460 | 2520 | 60 | 2% | 2580 | 60 | 2% | 1610 | 1760 | 150 | 9% | 1750 | -10 | -1% |
| | SB | 1230 | 1270 | 40 | 3% | 1250 | -20 | -2% | 2510 | 2630 | 120 | 5% | 2650 | 20 | 1% |
| 11 - s. of Dean Street | NB | 1560 | 1750 | 190 | 12% | 1790 | 40 | 2% | 1590 | 1640 | 50 | 3% | 1640 | 0 | 0% |
| | SB | 950 | 960 | 10 | 1% | 950 | -10 | -1% | 1970 | 2100 | 130 | 7% | 2080 | -20 | -1% |

(Robert Sievert, 971021, VolComp3.xls)

| (For numbered location refer to attached map) | AM Peak Hour | | | | | | | PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1995 Balanced Counts | 2020 WITHOUT New Garage | Change from 1995 Balanced Counts | | 2020 WITH New Garage | Change from 2020 WITHOUT New Parking | | 1995 Balanced Counts | 2020 WITHOUT New Garage | Change from 1995 Balanced Counts | | 2020 WITH New Garage | Change from 2020 WITHOUT New Parking | |
| **RAMPS** | | | Volume | Percent | | Volume | Percent | | | Volume | Percent | | Volume | Percent |
| I-95 From/To Route 128 (I-95/I-93) | | | | | | | | | | | | | | |
| 12 - I-95 NB to Route 128 NB | 1960 | 2580 | 620 | 32% | 2740 | 160 | 6% | 1230 | 1550 | 320 | 26% | 1560 | 10 | 1% |
| - I-95 NB to Route 128 SB | 2930 | 3380 | 450 | 15% | 3350 | -30 | -1% | 1640 | 1800 | 160 | 10% | 1800 | 0 | 0% |
| - Route 128 NB to I-95 SB | 1500 | 1650 | 150 | 10% | 1660 | 10 | 1% | 2690 | 3100 | 410 | 15% | 3100 | 0 | 0% |
| - Route 128 SB to I-95 SB | 1100 | 1390 | 290 | 26% | 1400 | 10 | 1% | 1920 | 2390 | 470 | 24% | 2470 | 80 | 3% |
| Rt 128 SB From/To Blue Hill Drive | | | | | | | | | | | | | | |
| 13 - On-Ramp NB | 170 | 220 | 50 | 29% | 250 | 30 | 14% | 1040 | 1230 | 190 | 18% | 1740 | 510 | 41% |
| - Off-Ramp SB | 420 | 560 | 140 | 33% | 840 | 280 | 50% | 80 | 120 | 40 | 50% | 190 | 70 | 58% |
| **LOCAL ROADWAYS** | | | | | | | | | | | | | | |
| University Avenue/Everett Street | | | | | | | | | | | | | | |
| 14 - n. of Rail Stn driveways NB | 170 | 270 | 100 | 59% | 270 | 0 | 0% | 480 | 690 | 210 | 44% | 910 | 220 | 32% |
| SB | 810 | 1010 | 200 | 25% | 1520 | 510 | 50% | 190 | 210 | 20 | 11% | 230 | 20 | 10% |
| 15 - s. of Rail Stn driveways NB | 430 | 520 | 90 | 21% | 1040 | 520 | 100% | 460 | 660 | 200 | 43% | 650 | -10 | -2% |
| SB | 710 | 860 | 150 | 21% | 850 | -10 | -1% | 410 | 470 | 60 | 15% | 1110 | 640 | 136% |
| 16 - s. of Blue Hill Drive NB | 410 | 520 | 110 | 27% | 730 | 210 | 40% | 1130 | 1520 | 390 | 35% | 1450 | -70 | -5% |
| SB | 920 | 1180 | 260 | 28% | 1170 | -10 | -1% | 260 | 350 | 90 | 35% | 470 | 120 | 34% |
| 17 - s. of Canton/ NB/EB | 440 | 490 | 50 | 11% | 460 | -30 | -6% | 350 | 350 | 0 | 0% | 360 | 10 | 3% |
| Dedham Street SB/WB | 510 | 600 | 90 | 18% | 490 | -110 | -18% | 420 | 500 | 80 | 19% | 560 | 60 | 12% |
| 18 - e. of Route 1 EB | 960 | 1000 | 40 | 4% | 970 | -30 | -3% | 470 | 470 | 0 | 0% | 480 | 10 | 2% |
| WB | 440 | 560 | 120 | 27% | 480 | -80 | -14% | 770 | 880 | 110 | 14% | 960 | 80 | 9% |
| 19 - w. of Route 1 EB | 670 | 870 | 200 | 30% | 910 | 40 | 5% | 600 | 610 | 10 | 2% | 620 | 10 | 2% |
| WB | 470 | 460 | -10 | -2% | 460 | 0 | 0% | 460 | 580 | 120 | 26% | 660 | 80 | 14% |

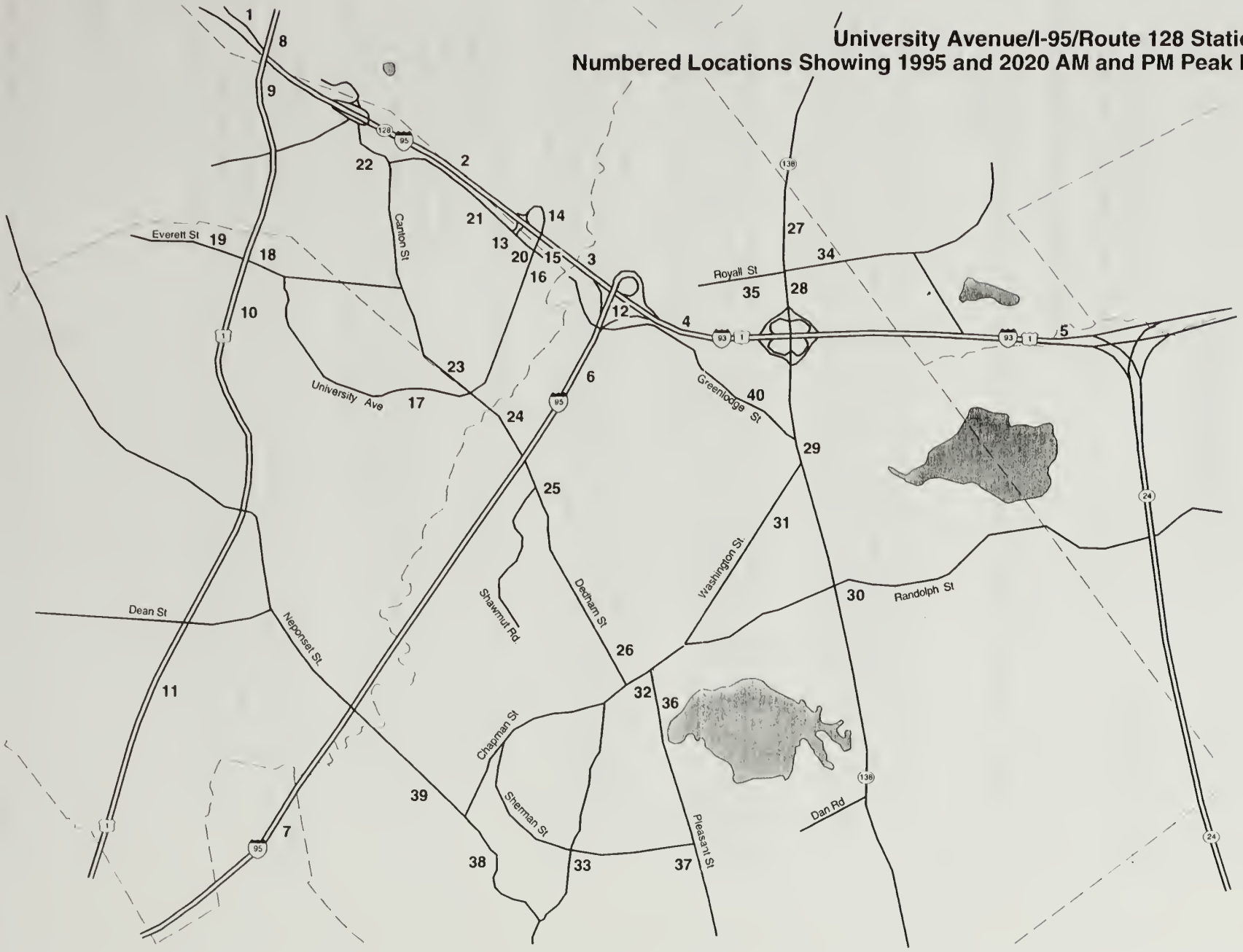
(Robert Sievert, 971021, VolComp3.xls)

| (For numbered location refer to attached map) | | AM Peak Hour | | | | | | | PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | Change from 1995 Balanced Counts | | 2020 WITH New Garage | Change from 2020 WITHOUT New Parking | | 1995 Balanced Counts | 2020 WITHOUT New Garage | Change from 1995 Balanced Counts | | 2020 WITH New Garage | Change from 2020 WITHOUT New Parking | |
| | | | | Volume | Percent | | Volume | Percent | | | Volume | Percent | | Volume | Percent |
| **LOCAL ROADWAYS (cont.)** | | | | | | | | | | | | | | | |
| Blue Hill Drive | | | | | | | | | | | | | | | |
| 20 - e. of Route 128 SB ramp | EB | 500 | 630 | 130 | 26% | 910 | 280 | 44% | 120 | 170 | 50 | 42% | 210 | 40 | 24% |
| | WB | 170 | 200 | 30 | 18% | 200 | 0 | 0% | 940 | 1130 | 190 | 20% | 1650 | 520 | 46% |
| 21 - w. of Route 128 SB ramp | EB | 100 | 130 | 30 | 30% | 130 | 0 | 0% | 200 | 210 | 10 | 5% | 180 | -30 | -14% |
| | WB | 30 | 50 | 20 | 67% | 10 | -40 | -80% | 70 | 70 | 0 | 0% | 60 | -10 | -14% |
| Canton/Dedham Street | | | | | | | | | | | | | | | |
| 22 - n. of Blue Hill Drive | NB | 470 | 520 | 50 | 11% | 610 | 90 | 17% | 570 | 660 | 90 | 16% | 640 | -20 | -3% |
| | SB | 410 | 460 | 50 | 12% | 460 | 0 | 0% | 870 | 900 | 30 | 3% | 960 | 60 | 7% |
| 23 - n. of University Avenue | NB | 490 | 510 | 20 | 4% | 590 | 80 | 16% | 220 | 230 | 10 | 5% | 250 | 20 | 9% |
| | SB | 190 | 190 | 0 | 0% | 200 | 10 | 5% | 570 | 610 | 40 | 7% | 450 | -160 | -26% |
| 24 - s. of University Avenue | NB | 990 | 1230 | 240 | 24% | 1400 | 170 | 14% | 440 | 490 | 50 | 11% | 470 | -20 | -4% |
| | SB | 370 | 370 | 0 | 0% | 360 | -10 | -3% | 750 | 850 | 100 | 13% | 750 | -100 | -12% |
| 25 - s. of Shawmut Road | NB | 1440 | 1600 | 160 | 11% | 1800 | 200 | 13% | 250 | 290 | 40 | 16% | 300 | 10 | 3% |
| | SB | 150 | 160 | 10 | 7% | 150 | -10 | -6% | 1410 | 1530 | 120 | 9% | 1490 | -40 | -3% |
| 26 - n. of Washington Street | NB | 800 | 930 | 130 | 16% | 1030 | 100 | 11% | 280 | 310 | 30 | 11% | 290 | -20 | -6% |
| | SB | 220 | 180 | -40 | -18% | 180 | 0 | 0% | 610 | 660 | 50 | 8% | 710 | 50 | 8% |
| Route 138 | | | | | | | | | | | | | | | |
| 27 - n. of Royall Street | NB | 1660 | 1680 | 20 | 1% | 1720 | 40 | 2% | 1000 | 1170 | 170 | 17% | 1180 | 10 | 1% |
| | SB | 1050 | 1160 | 110 | 10% | 1180 | 20 | 2% | 1410 | 1520 | 110 | 8% | 1530 | 10 | 1% |
| 28 - s. of Royall Street | NB | 1810 | 2430 | 620 | 34% | 2410 | -20 | -1% | 950 | 1070 | 120 | 13% | 1080 | 10 | 1% |
| | SB | 1110 | 1200 | 90 | 8% | 1200 | 0 | 0% | 1790 | 2280 | 490 | 27% | 2230 | -50 | -2% |
| 29 - s. of Greenlodge Street | NB | 1540 | 1750 | 210 | 14% | 1750 | 0 | 0% | 1330 | 1440 | 110 | 8% | 1430 | -10 | -1% |
| | SB | 1140 | 1220 | 80 | 7% | 1210 | -10 | -1% | 1400 | 1580 | 180 | 13% | 1550 | -30 | -2% |
| 30 - s. of Randolph Street | NB | 740 | 900 | 160 | 22% | 920 | 20 | 2% | 990 | 1070 | 80 | 8% | 1080 | 10 | 1% |
| | SB | 930 | 1110 | 180 | 19% | 1090 | -20 | -2% | 780 | 870 | 90 | 12% | 870 | 0 | 0% |

(Robert Sievert, 971021, VolComp3.xls)

| (For numbered location refer to attached map) | | AM Peak Hour | | | | | | | PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced | 2020 WITHOUT | Change from 1995 Balanced | | 2020 WITH New | Change from 2020 WITHOUT New Parking | | 1995 Balanced | 2020 WITHOUT | Change from 1995 Balanced | | 2020 WITH New | Change from 2020 WITHOUT New Parking | |
| **LOCAL ROADWAYS (cont.)** | | Counts | New Garage | Counts | | Garage | | | Counts | New Garage | Counts | | Garage | | |
| | | | | Volume | Percent | | Volume | Percent | | | Volume | Percent | | Volume | Percent |
| Washington Street | | | | | | | | | | | | | | | |
| 31 - s. of Route 138 | NB | 690 | 920 | 230 | 33% | 900 | -20 | -2% | 520 | 590 | 70 | 13% | 600 | 10 | 2% |
| | SB | 280 | 290 | 10 | 4% | 290 | 0 | 0% | 570 | 700 | 130 | 23% | 690 | -10 | -1% |
| 32 - n. of Dedham Street | NB | 840 | 1000 | 160 | 19% | 930 | -70 | -7% | 1070 | 1080 | 10 | 1% | 1060 | -20 | -2% |
| (south of Pleasant Street) | SB | 820 | 830 | 10 | 1% | 910 | 80 | 10% | 810 | 920 | 110 | 14% | 930 | 10 | 1% |
| 33 - s. of Sherman Street | NB | 720 | 840 | 120 | 17% | 820 | -20 | -2% | 580 | 620 | 40 | 7% | 620 | 0 | 0% |
| | SB | 380 | 470 | 90 | 24% | 450 | -20 | -4% | 780 | 890 | 110 | 14% | 870 | -20 | -2% |
| Royall Street | | | | | | | | | | | | | | | |
| 34 - e. of Route 138 | EB | 60 | 70 | 10 | 17% | 60 | -10 | -14% | 250 | 430 | 180 | 72% | 390 | -40 | -9% |
| | WB | 390 | 560 | 170 | 44% | 590 | 30 | 5% | 350 | 430 | 80 | 23% | 410 | -20 | -5% |
| 35 - w. of Route 138 | EB | 110 | 290 | 180 | 164% | 280 | -10 | -3% | 500 | 1250 | 750 | 150% | 1160 | -90 | -7% |
| | WB | 520 | 1490 | 970 | 187% | 1480 | -10 | -1% | 160 | 390 | 230 | 144% | 380 | -10 | -3% |
| Pleasant Street | | | | | | | | | | | | | | | |
| 36 - s. of Washington Street | NB | 480 | 620 | 140 | 29% | 780 | 160 | 26% | 220 | 230 | 10 | 5% | 240 | 10 | 4% |
| | SB | 130 | 170 | 40 | 31% | 160 | -10 | -6% | 640 | 670 | 30 | 5% | 660 | -10 | -1% |
| 37 - s. of Sherman Street | NB | 680 | 910 | 230 | 34% | 1040 | 130 | 14% | 340 | 430 | 90 | 26% | 420 | -10 | -2% |
| | SB | 260 | 300 | 40 | 15% | 290 | -10 | -3% | 770 | 870 | 100 | 13% | 860 | -10 | -1% |
| Neponset Street | | | | | | | | | | | | | | | |
| 38 - e. of Chapman Street | EB | 470 | 520 | 50 | 11% | 500 | -20 | -4% | 1020 | 1020 | 0 | 0% | 1020 | 0 | 0% |
| | WB | 1150 | 1050 | -100 | -9% | 1130 | 80 | 8% | 550 | 560 | 10 | 2% | 560 | 0 | 0% |
| 39 - w. of Chapman Street | EB | 910 | 1040 | 130 | 14% | 1010 | -30 | -3% | 1200 | 1210 | 10 | 1% | 1200 | -10 | -1% |
| | WB | 1280 | 1190 | -90 | -7% | 1280 | 90 | 8% | 1040 | 1140 | 100 | 10% | 1200 | 60 | 5% |
| Greenlodge Street | | | | | | | | | | | | | | | |
| 40 - w. of Route 138 | EB | 50 | 70 | 20 | 40% | 70 | 0 | 0% | 130 | 120 | -10 | -8% | 20 | -100 | -83% |
| | WB | 120 | 100 | -20 | -17% | 30 | -70 | -70% | 50 | 40 | -10 | -20% | 30 | -10 | -25% |

(Robert Sievert, 971021, VolComp3.xls)


University Avenue/I-95/Route 128 Station Study Area
Numbered Locations Showing 1995 and 2020 AM and PM Peak Hour Volumes
Everett St
Canton St
Royall St
University Ave
Greenlodge St
Dean St
Neponset St
Shawmut Rd.
Dedham St
Washington St.
Randolph St
Chapman St
Sherman St
Pleasant St
Dan Rd

# [APPENDIX B-4]

## MEMORANDUM

**TO:** **University Avenue / I-95 / Route 128 Station Study Task Force** **10 December, 1997**

**FROM:** **Robert Sievert and Efi Pagitsas**

**RE:** **1995 PM Peak Hour Counts and 2020 No-Build and Build PM Peak Hour Volumes (DRAFT)**

The attached information contains some of the traffic volume output from CTPS' University Avenue / I-95 / Route 128 Station Study. The data is for the 1995 and 2020 PM peak hour only, and complements the AM peak hour data which was distributed at the Task Force meeting on 2 December. As with the AM peak hour data, all traffic volumes should be considered "DRAFT", even though changes are not anticipated at this time.

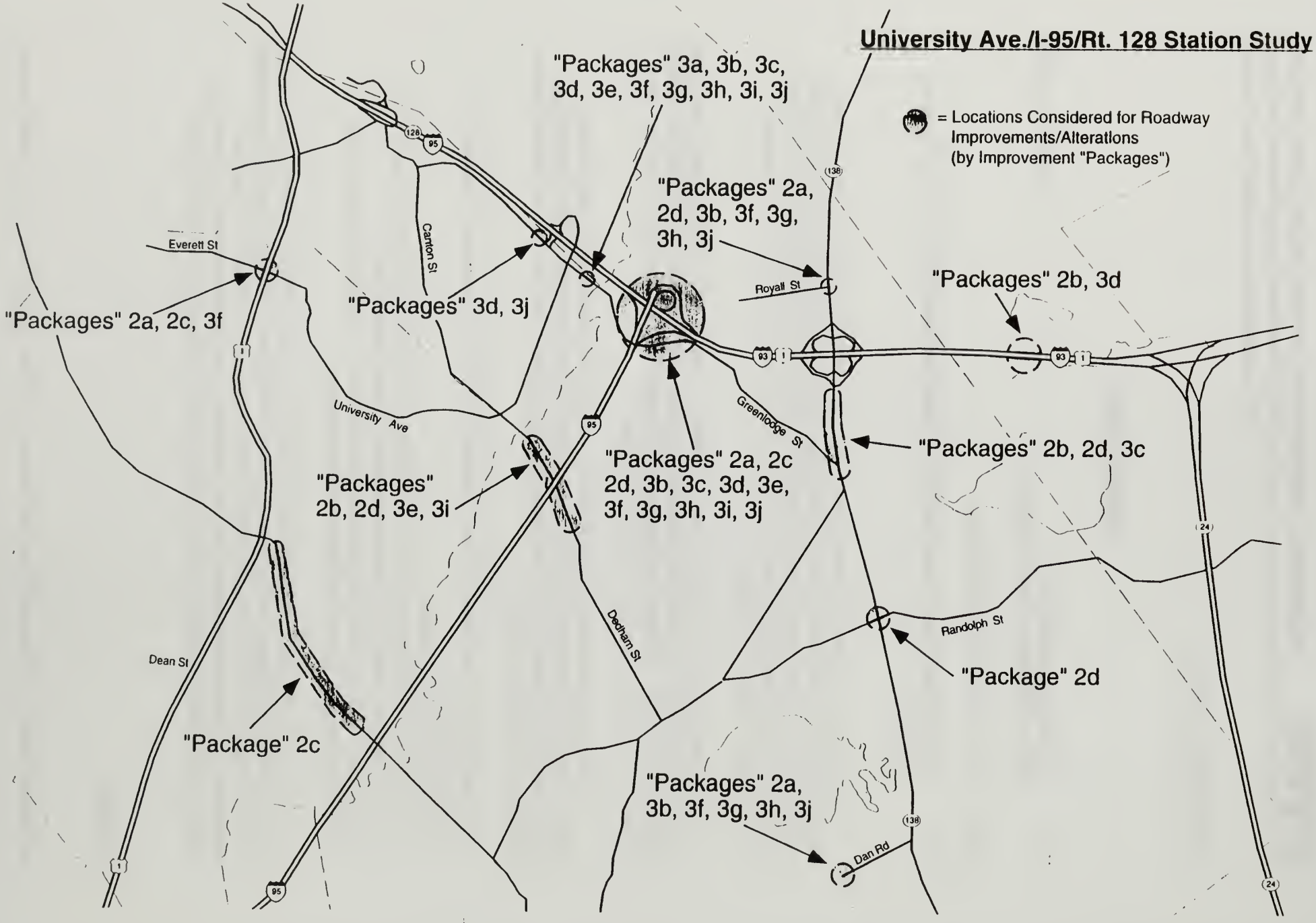
The data shown are for selected Study Area roadways, for No-Build: 1995 PM peak hour counts, 2020 forecasts WITHOUT the new Route 128 Station garage, and 2020 forecasts WITH the new garage in place; and for Build: "Packages" of roadway improvements (which include the new garage). Each "package" is made up of one or more individual elements.

When reading the attached tables of traffic volumes by individual roadway improvement element, it should be understood that all volume comparisons have been made between 2020 Build volumes and 2020 No-Build volumes, both with the garage in place. The information contained herein is divided into the following sections:

- A map depicting study area locations of potential roadway improvements by "packages" of combined elements
- A list of individual elements
- A table of 1995 PM peak hour counts (if available) and 2020 PM peak hour volumes for each specific element, as well as for roadways within the element's impact area
- A table of 1995 PM peak hour counts and 2020 PM peak hour volumes for key locations throughout the study area, by No-Build and Build scenarios.

At the upcoming Task Force meeting (Tuesday 16 December, 3:00 PM), CTPS will be discussing the effects which the elements would potentially have on traffic levels and traffic patterns throughout the study area. Once the information in this packet, and the previously distributed AM peak hour information, has been absorbed by the Task Force members, it is expected that in the near future the various elements and/or "Packages" will be ranked according to agreed upon evaluation criteria.

RES/EP/res


University Ave./I-95/Rt. 128 Station Study
= Locations Considered for Roadway Improvements/Alterations (by Improvement "Packages")
"Packages" 3a, 3b, 3c, 3d, 3e, 3f, 3g, 3h, 3i, 3j
"Packages" 2a, 2d, 3b, 3f, 3g, 3h, 3j
"Packages" 2b, 3d
"Packages" 2a, 2c, 3f
"Packages" 3d, 3j
"Packages" 2a, 2c 2d, 3b, 3c, 3d, 3e, 3f, 3g, 3h, 3i, 3j
"Packages" 2b, 2d, 3c
"Packages" 2b, 2d, 3e, 3i
"Package" 2d
"Package" 2c
"Packages" 2a, 3b, 3f, 3g, 3h, 3j
Everett St
Carlton St
Royall St
University Ave
Greenlodge St
Dedham St
Randolph St
Dean St
Dan Rd
128
95
93
1
24
138

## ELEMENTS of ROADWAY IMPROVEMENTS:

1. I-95 (128) SB, NORTH OF I-95: 5th lane on mainline; 2nd lane on I-95 SB Off-Ramp
   (Included in: "Packages": 2a, 3f)

2. ROUTE 138 @ ROYALL STREET: Intersection Improvements
   (Included in "Packages" 2a, 2d, 3b, 3f, 3g, 3h, 3j)

3. ROUTE 1 @ EVERETT STREET: Single Point Urban Interchange
   (Included in "Packages" 2a, 2c, 3f)

4. EAST-WEST ROAD: New connector between Pleasant Street and Dan Road (Rt. 138)
   (Included in "Packages" 2a, 3b, 3f, 3g, 3h, 3j)

5. I-95 @ DEDHAM STREET: On-Ramps, Off-Ramps, local street widening
   (Included in "Packages" 2b, 2d, 3e, 3i)

6. ROUTE 138 @ GREENLODGE STREET: Roadway widening, signal
   (Included in "Packages" 2b, 2d, 3c)

7. NEPONSET STREET BETWEEN I-95 and ROUTE 1: Roadway widening
   (Included in "Package" 2c)

8. ROYALL STREET / I-95 RAMPS: TO I-95 SB; TO I-95 (128) NB; FROM I-95 NB
   (Included in "Packages" 2c, 3c, 3e, 3i)

9. I-95/I-93 ROUTE 128 INTERCHANGE : Complete rebuilding (similar to Rt. 24)
   (Included in "Package" 2d)

10. GREENLODGE STREET BRIDGE: Rebuilt over rail line
    (Included in "Packages" 3a, 3b, 3c, 3d, 3e, 3f, 3g, 3h, 3i, 3j)

11. GREENLODGE STREET / I-95 SLIP RAMPS: Northbound OFF, Southbound ON
    (Included in "Packages" 3b, 3c, 3d, 3g, 3h, 3j)

12. "UNUSED BRIDGE" OVER ROUTE 128: Connecting Greenlodge St.with Royall St. and I-95 SB
    (Included in "Package" 3c)

13. GREENLODGE STREET: One-way WB between Elm Street and new I-95 slip ramp area
    (Included in "Package" 3c)

14. GREENLODGE STREET: Closed between Elm Street and new I-95 slip ramp area
    (Included in "Package" 3d)

15. RAMP BETWEEN I-95 NB and ROUTE 128 (I-95) NB ("Dead Man's Curve):Rebuilt structure
    (Included in "Package" 3d)

16. BLUE HILL DRIVE: Closed west of Route 128 SB ramps (i.e., creation of a cul-de-sac)
    (Included in "Package" 3d)

17. PONKAPOAG @ ROUTE 128 (I-93) INTERCHANGE: Close interchange
    (Included in "Packages" 2b, 3d; NO DIAGRAM)

18. ROUTE 138 @ RANDOLPH STREET: Expanding approaches at intersection
    (Included in "Package" 2d; NO DIAGRAM)

I-95 (128) SB, NORTH of I-95: 5th lane on mainline; 2nd lane on I-95 SB Off-Ramp (Included in "Packages" 2 a, 3 f)

Element 1

| | NO-BUILD | | | BUILD | | | |
|---|---|---|---|---|---|---|---|
| | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 a Volume | % Ch. | "Package" 3 f Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | | |
| - Route 128 SB, s. of East St. | 5160 | 6190 | 6420 | 6460 | 1% | 6350 | -1% |
| - Route 128 SB, s. of Blue Hill Dr. | 4910 | 5850 | 5830 | 5830 | 0% | 5790 | -1% |
| - Route 128 SB, s. of I-95 SB Off-Ramp | 3810 | 4460 | 4420 | 4430 | 0% | 4390 | -1% |
| - Route 128 SB Off-Ramp to I-95 SB | 1100 | 1390 | 1400 | 1400 | 0% | 1400 | 0% |
| - Blue Hill Dr. On-Ramp to 128 SB | 170 | 220 | 250 | 250 | 0% | 250 | 0% |
| **PM Peak Hour Volumes:** | | | | | | | |
| - Route 128 SB, s. of East St. | 6640 | 7590 | 7600 | 7610 | 0% | 7610 | 0% |
| - Route 128 SB, s. of Blue Hill Dr. | 7520 | 8690 | 9160 | 9260 | 1% | 9200 | 0% |
| - Route 128 SB, s. of I-95 SB Off-Ramp | 6600 | 6300 | 6690 | 6700 | 0% | 6620 | -1% |
| - Route 128 SB Off-Ramp to I-95 SB | 1920 | 2390 | 2470 | 2560 | 4% | 2580 | 4% |
| - Blue Hill Dr. On-Ramp to 128 SB | 1040 | 1230 | 1740 | 1770 | 2% | 1720 | -1% |

(Robert Sievert, 971204, 5&2Lanes.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**ROUTE 138 @ ROYALL STREET: Intersection Improvements**
**(Included in "Packages" 2 a, 2 d, 3 b, 3 f, 3 g, 3 h, 3 j)**

**Element 2**

| | | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 a | | "Package" 2 d | | "Package" 3 b | | "Package" 3 f | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| **PM Peak Hour Volumes:** | | | | | | | | | | | | |
| - Route 138, s. of Route 128 | NB | 1390 | 1490 | 1440 | 1440 | 0% | 1370 | -5% | 1430 | -1% | 1430 | -1% |
| | SB | 1410 | 1550 | 1560 | 1650 | 6% | 1630 | 4% | 1600 | 3% | 1570 | 1% |
| - Route 138, s. of Royall Street | NB | 950 | 1070 | 1080 | 980 | -9% | 980 | -9% | 980 | -9% | 980 | -9% |
| | SB | 1790 | 2280 | 2230 | 1440 | -35% | 1410 | -37% | 1360 | -39% | 1440 | -35% |
| - Route 138, n. of Royall Street | NB | 1000 | 1170 | 1180 | 1180 | 0% | 1180 | 0% | 1180 | 0% | 1180 | 0% |
| | SB | 1410 | 1520 | 1530 | 1530 | 0% | 1530 | 0% | 1530 | 0% | 1530 | 0% |
| - Royall Street, e. of Route 138 | EB | 250 | 430 | 390 | 360 | -8% | 400 | 3% | 490 | 26% | 370 | -5% |
| | WB | 350 | 430 | 410 | 410 | 0% | 420 | 2% | 460 | 12% | 410 | 0% |
| - Royall Street, w. of Route 138 | EB | 500 | 1250 | 1160 | 400 | -66% | 400 | -66% | 400 | -66% | 410 | -65% |
| | WB | 160 | 390 | 380 | 340 | -11% | 340 | -11% | 340 | -11% | 340 | -11% |
| - Instron driveway | EB | -- | -- | -- | 770 | -- | 770 | -- | 770 | -- | 760 | -- |
| | WB | -- | -- | -- | 40 | -- | 40 | -- | 40 | -- | 40 | -- |
| - Rt 138 NB left-turns to Instron | WB | -- | -- | -- | 40 | -- | 40 | -- | 40 | -- | 40 | -- |

(Robert Sievert, 971204, 138@Royl.xls)

| | | 1995 Counts | 2020 WITHOUT | 2020 WITH New | "Package" 3 g | | "Package" 3 h | | "Package" 3 j | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| **PM Peak Hour Volumes (cont.):** | | | | | | | | | | |
| - Route 138, s. of Route 128 | NB | 1390 | 1490 | 1440 | 1440 | 0% | 1430 | -1% | 1480 | 3% |
| | SB | 1410 | 1550 | 1560 | 1570 | 1% | 1600 | 3% | 1620 | 4% |
| - Route 138, s. of Royall Street | NB | 950 | 1070 | 1080 | 980 | -9% | 980 | -9% | 980 | -9% |
| | SB | 1790 | 2280 | 2230 | 1360 | -39% | 1360 | -39% | 1410 | -37% |
| - Route 138, n. of Royall Street | NB | 1000 | 1170 | 1180 | 1180 | 0% | 1180 | 0% | 1180 | 0% |
| | SB | 1410 | 1520 | 1530 | 1530 | 0% | 1530 | 0% | 1530 | 0% |
| - Royall Street, e. of Route 138 | EB | 250 | 430 | 390 | 460 | 18% | 490 | 26% | 470 | 21% |
| | WB | 350 | 430 | 410 | 430 | 5% | 460 | 12% | 480 | 17% |
| - Royall Street, w. of Route 138 | EB | 500 | 1250 | 1160 | 400 | -66% | 400 | -66% | 400 | -66% |
| | WB | 160 | 390 | 380 | 340 | -11% | 340 | -11% | 340 | -11% |
| - Instron driveway | EB | -- | -- | -- | 760 | -- | 770 | -- | 770 | -- |
| | WB | -- | -- | -- | 40 | -- | 40 | -- | 40 | -- |
| - Rt 138 NB left-turns to Instron | WB | -- | -- | -- | 40 | -- | 40 | -- | 40 | -- |

## ROUTE 1 @ EVERETT STREET: Single Point Urban Interchange
## (Included in "Packages" 2 a, 2 c, 3 f)

**Element 3**

| | | NO-BUILD | | | BUILD | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 a | | "Package" 2 c | | "Package" 3 f | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | | | | | |
| - Route 1, s. of Everett St. | NB | 2460 | 2520 | 2580 | 2730 | 6% | 2720 | 5% | 2730 | 6% |
| | SB | 1230 | 1270 | 1250 | 1240 | -1% | 1380 | 10% | 1270 | 2% |
| - Route 1, n. of Everett St. | NB | -- | 2380 | 2460 | 2420 | -2% | 2550 | 4% | 2570 | 4% |
| | SB | 1690 | 1680 | 1700 | 1700 | 0% | 1840 | 8% | 1720 | 1% |
| - Everett St., w. of Route 1 | EB | 670 | 870 | 910 | 690 | -24% | 860 | -5% | 660 | -27% |
| | WB | 470 | 460 | 460 | 450 | -2% | 460 | 0% | 490 | 7% |
| - Everett St., e. of Route 1 | EB | 960 | 1000 | 970 | 1010 | 4% | 970 | 0% | 910 | -6% |
| | WB | 440 | 560 | 480 | 500 | 4% | 460 | -4% | 610 | 27% |
| - New Route 1 Underpass | NB | 1860 | 1920 | 1980 | 1900 | -4% | 1890 | -5% | 2020 | 2% |
| (through traffic) | SB | 1060 | 1070 | 1070 | 1080 | 1% | 1230 | 15% | 1080 | 1% |
| **PM Peak Hour Volumes:** | | | | | | | | | | |
| - Route 1, s. of Everett St. | NB | 1610 | 1760 | 1750 | 1770 | 1% | 1780 | 2% | 1770 | 1% |
| | SB | 2510 | 2630 | 2650 | 2630 | -1% | 2780 | 5% | 2650 | 0% |
| - Route 1, n. of Everett St. | NB | -- | 2310 | 2320 | 2310 | 0% | 2330 | 0% | 2310 | 0% |
| | SB | 2430 | 2550 | 2620 | 2650 | 1% | 2790 | 6% | 2650 | 1% |
| - Everett St., w. of Route 1 | EB | 600 | 610 | 620 | 580 | -6% | 590 | -5% | 580 | -6% |
| | WB | 460 | 580 | 660 | 700 | 6% | 680 | 3% | 650 | -2% |
| - Everett St., e. of Route 1 | EB | 470 | 470 | 480 | 480 | 0% | 470 | -2% | 480 | 0% |
| | WB | 770 | 880 | 960 | 950 | -1% | 930 | -3% | 920 | -4% |
| - New Route 1 Underpass | NB | 1260 | 1370 | 1380 | 1410 | 2% | 1430 | 4% | 1410 | 2% |
| (through traffic) | SB | 1930 | 2000 | 2010 | 2040 | 1% | 2170 | 8% | 2040 | 1% |

(Robert Sievert, 971204, 1@Evrt.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**EAST -WEST ROAD: New connector between Pleasant Street and Dan Road (Rt 138)**
**(Included in "Packages" 2 a, 3 b, 3 f, 3 g, 3 h, 3 j)**

**Element 4**

| | | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 a | | "Package" 3 b | | "Package" 3 f | | "Package" 3 g | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| PM Peak Hour Volumes: | | | | | | | | | | | | |
| - East - West Road | EB | -- | -- | -- | 100 | -- | 100 | -- | 100 | -- | 100 | -- |
| | WB | -- | -- | -- | 170 | -- | 230 | -- | 170 | -- | 230 | -- |
| - Route 138, s. of Randolph St. | NB | 990 | 1070 | 1080 | 1010 | -6% | 1000 | -7% | 1010 | -6% | 1010 | -6% |
| | SB | 780 | 870 | 870 | 870 | 0% | 920 | 6% | 870 | 0% | 930 | 7% |
| - Randolph St, w. of Route 138 | EB | 630 | 560 | 520 | 450 | -13% | 470 | -10% | 440 | -15% | 460 | -12% |
| | WB | 410 | 420 | 430 | 340 | -21% | 280 | -35% | 330 | -23% | 330 | -23% |
| - Pleasant St, s. of Sherman St | NB | 340 | 430 | 420 | 440 | 5% | 390 | -7% | 440 | 5% | 380 | -10% |
| | SB | 770 | 870 | 860 | 770 | -10% | 720 | -16% | 770 | -10% | 720 | -16% |
| - Washington St, n. of Pleasant St | NB | 890 | 890 | 860 | 800 | -7% | 810 | -6% | 780 | -9% | 800 | -7% |
| | SB | 1050 | 1180 | 1150 | 1060 | -8% | 940 | -18% | 1060 | -8% | 970 | -16% |
| - Washington St, s. of Route 138 | NB | 520 | 590 | 600 | 590 | -2% | 570 | -5% | 590 | -2% | 580 | -3% |
| | SB | 570 | 700 | 690 | 660 | -4% | 610 | -12% | 660 | -4% | 590 | -14% |
| - Dedham St, n. of Washington St | NB | 280 | 310 | 290 | 330 | 14% | 290 | 0% | 320 | 10% | 320 | 10% |
| | SB | 610 | 660 | 710 | 640 | -10% | 700 | -1% | 640 | -10% | 710 | 0% |
| - Neponset St, w. of Chapman St. | EB | 1200 | 1210 | 1200 | 1240 | 3% | 1200 | 0% | 1240 | 3% | 1190 | -1% |
| | WB | 1040 | 1140 | 1200 | 1190 | -1% | 1140 | -5% | 1190 | -1% | 1150 | -4% |

(Robert Sievert, 971204, EastWest.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

| | | NO-BUILD | | | BUILD | | | |
|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 h | | "Package" 3 j | |
| | | | | | Volume | % Ch. | Volume | % Ch. |
| **PM Peak Hour Volumes (cont.):** | | | | | | | | |
| - East - West Road | EB | -- | -- | -- | 100 | -- | 100 | -- |
| | WB | -- | -- | -- | 230 | -- | 240 | -- |
| - Route 138, s. of Randolph St. | NB | 990 | 1070 | 1080 | 1000 | -7% | 1010 | -6% |
| | SB | 780 | 870 | 870 | 920 | 6% | 940 | 8% |
| - Randolph St, w. of Route 138 | EB | 630 | 560 | 520 | 470 | -10% | 510 | -2% |
| | WB | 410 | 420 | 430 | 290 | -33% | 330 | -23% |
| - Pleasant St, s. of Sherman St | NB | 340 | 430 | 420 | 390 | -7% | 370 | -12% |
| | SB | 770 | 870 | 860 | 720 | -16% | 740 | -14% |
| - Washington St, n. of Pleasant St | NB | 890 | 890 | 860 | 810 | -6% | 850 | -1% |
| | SB | 1050 | 1180 | 1150 | 940 | -18% | 1000 | -13% |
| - Washington St, s. of Route 138 | NB | 520 | 590 | 600 | 570 | -5% | 620 | 3% |
| | SB | 570 | 700 | 690 | 610 | -12% | 610 | -12% |
| - Dedham St, n. of Washington St | NB | 280 | 310 | 290 | 290 | 0% | 300 | 3% |
| | SB | 610 | 660 | 710 | 700 | -1% | 720 | 1% |
| - Neponset St, w. of Chapman St. | EB | 1200 | 1210 | 1200 | 1200 | 0% | 1190 | -1% |
| | WB | 1040 | 1140 | 1200 | 1140 | -5% | 1190 | -1% |

(Robert Sievert, 971204, EastWest.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

## I-95 @ DEDHAM STREET: On-Ramps, Off-Ramps, local street widening
## (Included in "Packages" 2 b, 2 d, 3 e, 3 i)

**Element 5**

| | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 b Volume | % Ch. | "Package" 2 d Volume | % Ch. | "Package" 3 e Volume | % Ch. | "Package" 3 I Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | | | | | | |
| - I-95 NB to Dedham Street OFF-RAMP | -- | -- | -- | 770 | -- | 650 | -- | 820 | -- | 800 | -- |
| - Dedham Street to I-95 NB ON-RAMP | -- | -- | -- | 240 | -- | 640 | -- | 80 | -- | 80 | -- |
| - I-95 SB to Dedham Street OFF-RAMP | -- | -- | -- | 210 | -- | 490 | -- | 200 | -- | 200 | -- |
| - Dedham Street to I-95 SB ON-RAMP | -- | -- | -- | 100 | -- | 90 | -- | 80 | -- | 80 | -- |
| - Dedham Street NB, s. of Shawmut Road | 1440 | 1600 | 1800 | 1400 | -22% | 1480 | -18% | 1170 | -35% | 1130 | -37% |
| - Dedham Street SB, s. of Shawmut Road | 150 | 160 | 150 | 120 | -20% | 140 | -7% | 130 | -13% | 130 | -13% |
| - Dedham Street NB, over I-95 | 1260 | 1450 | 1640 | 1850 | 13% | 1400 | -15% | 1810 | 10% | 1770 | 8% |
| - Dedham Street SB, over I-95 | 290 | 280 | 270 | 310 | 15% | 330 | 22% | 330 | 22% | 330 | 22% |
| - Dedham Street NB, s. of University Ave | 990 | 1230 | 1400 | 1640 | 17% | 1450 | 4% | 1600 | 14% | 1550 | 11% |
| - Dedham Street SB, s. of University Ave | 370 | 370 | 360 | 330 | -8% | 320 | -11% | 320 | -11% | 320 | -11% |
| **PM Peak Hour Volumes:** | | | | | | | | | | | |
| - I-95 NB to Dedham Street OFF-RAMP | -- | -- | -- | 90 | -- | 80 | -- | 90 | -- | 90 | -- |
| - Dedham Street to I-95 NB ON-RAMP | -- | -- | -- | 230 | -- | 440 | -- | 240 | -- | 240 | -- |
| - I-95 SB to Dedham Street OFF-RAMP | -- | -- | -- | 4 | -- | 70 | -- | 20 | -- | 20 | -- |
| - Dedham Street to I-95 SB ON-RAMP | -- | -- | -- | 440 | -- | 410 | -- | 470 | -- | 470 | -- |
| - Dedham Street NB, s. of Shawmut Road | 250 | 290 | 300 | 350 | 17% | 410 | 37% | 370 | 23% | 370 | 23% |
| - Dedham Street SB, s. of Shawmut Road | 1410 | 1530 | 1490 | 1370 | -8% | 1350 | -9% | 1360 | -9% | 1350 | -9% |
| - Dedham Street NB, over I-95 | 390 | 420 | 410 | 400 | -2% | 320 | -22% | 410 | 0% | 410 | 0% |
| - Dedham Street SB, over I-95 | 1160 | 1250 | 1180 | 1140 | -3% | 1210 | 3% | 1120 | -5% | 1120 | -5% |
| - Dedham Street NB, s. of University Ave | 440 | 490 | 470 | 290 | -38% | 300 | -36% | 300 | -36% | 300 | -36% |
| - Dedham Street SB, s. of University Ave | 750 | 850 | 750 | 990 | 32% | 1040 | 39% | 980 | 31% | 970 | 29% |

(Robert Sievert, 971205, I95@Dedh.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**ROUTE 138 @ GREENLODGE STREET: Roadway widening, signal**
**(Included in "Packages" 2 b, 2 d, 3 c)**

**Element 6**

| | | NO-BUILD | | | BUILD | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 b Volume | % Ch. | "Package" 2 d Volume | % Ch. | "Package" 3 c Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | | | | | |
| - Route 138, s. of Greenlodge St. | NB | 1540 | 1750 | 1750 | 1850 | 6% | 1820 | 4% | 1790 | 2% |
| | SB | 1140 | 1220 | 1210 | 1180 | -2% | 1140 | -6% | 1190 | -2% |
| - Route 138, n. of Greenlodge St | NB | 1560 | 1780 | 1810 | 1900 | 5% | 1840 | 2% | 1850 | 2% |
| | SB | 1240 | 1280 | 1230 | 1200 | -2% | 1160 | -6% | 1210 | -2% |
| - Greenlodge St., w. of Route 13 | EB | 50 | 70 | 70 | 50 | -29% | 40 | -43% | 70 | 0% |
| | WB | 120 | 120 | 120 | 30 | -75% | 30 | -75% | 30 | -75% |
| **PM Peak Hour Volumes:** | | | | | | | | | | |
| - Route 138, s. of Greenlodge St. | NB | 1330 | 1440 | 1430 | 1650 | 15% | 1370 | -4% | 1430 | 0% |
| | SB | 1400 | 1580 | 1550 | 1560 | 1% | 1610 | 4% | 1560 | 1% |
| - Route 138, n. of Greenlodge St | NB | 1390 | 1490 | 1440 | 1650 | 15% | 1370 | -5% | 1430 | -1% |
| | SB | 1410 | 1550 | 1560 | 1570 | 1% | 1630 | 4% | 1580 | 1% |
| - Greenlodge St., w. of Route 13 | EB | 130 | 120 | 120 | 20 | -83% | 20 | -83% | 20 | -83% |
| | WB | 50 | 50 | 50 | 30 | -40% | 30 | -40% | 40 | -20% |

(Robert Sievert, 971205, 138@Grlg.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**NEPONSET STREET BETWEEN I-95 and ROUTE 1: Roadway widening**
**(Included in "Package" 2 c)**

**Element 7**

| | | NO-BUILD | | | BUILD | |
|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 c Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | |
| - Neponset St., w. of I-95 | EB | -- | 790 | 790 | 970 | 23% |
| | WB | -- | 1800 | 1880 | 2060 | 10% |
| - Neponset St., e. of Route 1 | EB | -- | 260 | 250 | 480 | 92% |
| | WB | -- | 920 | 950 | 1480 | 56% |
| - Dean St., w. of Neponset St | EB | -- | 580 | 580 | 530 | -9% |
| | WB | -- | 880 | 930 | 590 | -37% |
| - I-95 NB, n. of Neponset St. | NB | 4900 | 5960 | 6080 | 5990 | -1% |
| | SB | 2600 | 3040 | 3070 | 2940 | -4% |
| - Neponset St., w. of Chapman S | EB | 910 | 1040 | 1010 | 1020 | 1% |
| | WB | 1280 | 1190 | 1280 | 1320 | 3% |
| - Chapman St., n. of Neponset S | NB | 660 | 710 | 680 | 700 | 3% |
| | SB | 350 | 330 | 320 | 380 | 19% |
| - Route 1, s. of Everett St | NB | 2460 | 2520 | 2580 | 2720 | 5% |
| | SB | 1230 | 1270 | 1250 | 1380 | 10% |
| **PM Peak Hour Volumes:** | | | | | | |
| - Neponset St., w. of I-95 | EB | -- | 1360 | 1420 | 1650 | 16% |
| | WB | -- | 1270 | 1330 | 1450 | 9% |
| - Neponset St., e. of Route 1 | EB | -- | 780 | 810 | 1150 | 42% |
| | WB | -- | 380 | 410 | 550 | 34% |
| - Dean St., w. of Neponset St | EB | -- | 590 | 620 | 530 | -15% |
| | WB | -- | 950 | 980 | 950 | -3% |
| - I-95 NB, n. of Neponset St. | NB | 2860 | 3350 | 3360 | 3360 | 0% |
| | SB | 4600 | 5480 | 5560 | 5500 | -1% |
| - Neponset St., w. of Chapman S | EB | 1200 | 1210 | 1200 | 1240 | 3% |
| | WB | 1040 | 1140 | 1200 | 1200 | 0% |
| - Chapman St., n. of Neponset S | NB | 470 | 490 | 460 | 470 | 2% |
| | SB | 770 | 870 | 930 | 880 | -5% |
| - Route 1, s. of Everett St | NB | 1610 | 1760 | 1750 | 1780 | 2% |
| | SB | 2510 | 2630 | 2650 | 2780 | 5% |

(Robert Sievert, 971205, Neponset.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**ROYALL STREET / I-95 RAMPS: TO I-95 SB; TO I-95 (128) NB; FROM I-95 NB**
**(Included in "Packages" 2 c, 3 c, 3 e, 3 i)**

Element 8

| | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 c Volume | % Ch. | "Package" 3 c Volume | % Ch. | "Package" 3 e Volume | % Ch. | "Package" 3 i Volume | % Ch. |
| AM Peak Hour Volumes: | | | | | | | | | | | |
| - Royall Street to I-95 SB ON-RAMP | -- | -- | -- | 120 | -- | 150 | -- | 190 | -- | 190 | -- |
| - Royall Street to I-95 (128) NB ON-RAMP | -- | -- | -- | 140 | -- | -- | -- | 60 | -- | 60 | -- |
| - I-95 NB to Royall Street OFF-RAMP | -- | -- | -- | 110 | -- | -- | -- | 200 | -- | 200 | -- |
| PM Peak Hour Volumes: | | | | | | | | | | | |
| - Royall Street to I-95 SB ON-RAMP | -- | -- | -- | 560 | -- | 570 | -- | 570 | -- | 570 | -- |
| - Royall Street to I-95 (128) NB ON-RAMP | -- | -- | -- | 190 | -- | -- | -- | 180 | -- | 180 | -- |
| - I-95 NB to Royall Street OFF-RAMP | -- | -- | -- | 20 | -- | -- | -- | 20 | -- | 20 | -- |

(Robert Sievert, 971205, RoylRmps.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

## I-95 / I-93 / RT. 128 INTERCHANGE: Complete rebuilding (similar to Rt. 24) (Included in "Package" 2 d)

**Element 9**

| | | NO-BUILD | | | BUILD | |
|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 d Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | |
| - I-95 NB to Rt 128 NB ramp | | 1960 | 2580 | 2740 | 3490 | 27% |
| - I-95 NB to Rt 128 SB ramp | | 2930 | 3380 | 3350 | 3260 | -3% |
| - Rt 128 NB to I-95 SB ramp | | 1500 | 1650 | 1660 | 2160 | 30% |
| - Rt 128 SB to I-95 SB ramp | | 1100 | 1390 | 1400 | 1390 | -1% |
| - Neponset St., w. of I-95 | EB | -- | 790 | 790 | 830 | 5% |
| | WB | -- | 1800 | 1880 | 1530 | -19% |
| - Neponset St., w. of Chapman S | EB | 910 | 1040 | 1010 | 880 | -13% |
| | WB | 1280 | 1190 | 1280 | 1340 | 5% |
| **PM Peak Hour Volumes:** | | | | | | |
| - I-95 NB to Rt 128 NB ramp | | 1230 | 1550 | 1560 | 1780 | 14% |
| - I-95 NB to Rt 128 SB ramp | | 1640 | 1800 | 1800 | 2050 | 14% |
| - Rt 128 NB to I-95 SB ramp | | 2690 | 3100 | 3100 | 3300 | 6% |
| - Rt 128 SB to I-95 SB ramp | | 1920 | 2390 | 2470 | 2310 | -6% |
| - Neponset St., w. of I-95 | EB | -- | 1360 | 1420 | 1410 | -1% |
| | WB | -- | 1270 | 1330 | 1430 | 8% |
| - Neponset St., w. of Chapman S | EB | 1200 | 1210 | 1200 | 1290 | 8% |
| | WB | 1040 | 1140 | 1200 | 1120 | -7% |

(Robert Sievert, 971205, LikeRt24.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**GREENLODGE STREET BRIDGE: Rebuilt over rail line**
**(Included in "Packages" 3 a, 3 b, 3 c, 3 d, 3 e, 3 f, 3 g, 3 h, 3 i, 3 j)**

**Element 10**

| | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 a | | "Package" 3 b | | "Package" 3 c | | "Package" 3 d | | "Package" 3 e | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| **PM Peak Hour Volumes:** | | | | | | | | | | | | | | |
| - Greenlodge Street over rail line | EB | -- | -- | -- | 110 | -- | 550 | -- | 390 | -- | 510 | -- | 80 | -- |
| | WB | -- | -- | -- | 10 | -- | 70 | -- | 80 | -- | 60 | -- | 10 | -- |
| - Elm St, s. of Greenlodge St | NB | 60 | 60 | 60 | 0 | -100% | 0 | -100% | 0 | -100% | 0 | -100% | 0 | -100% |
| | SB | 50 | 40 | 40 | 20 | -50% | 0 | -100% | 0 | -100% | 0 | -100% | 30 | -25% |
| - Greenlodge St, w. of Route 138 | EB | 130 | 120 | 120 | 100 | -17% | 60 | -50% | 20 | -83% | 20 | -83% | 70 | -42% |
| | WB | 50 | 50 | 50 | 30 | -40% | 50 | 0% | 40 | -20% | 30 | -40% | 30 | -40% |
| - Route 138, n. of Greenlodge St | NB | 1390 | 1490 | 1440 | 1440 | 0% | 1430 | -1% | 1430 | -1% | 1620 | 13% | 1410 | -2% |
| | SB | 1410 | 1550 | 1560 | 1460 | -6% | 1600 | 3% | 1580 | 1% | 1540 | -1% | 1490 | -4% |
| - Route 138, s. of Greenlodge St | NB | 1330 | 1440 | 1430 | 1440 | 1% | 1460 | 2% | 1430 | 0% | 1610 | 13% | 1410 | -1% |
| | SB | 1400 | 1580 | 1550 | 1530 | -1% | 1620 | 5% | 1560 | 1% | 1530 | -1% | 1540 | -1% |
| - Route 128 (I-93), n. of Route 138 | NB | 7150 | 8170 | 8150 | 8160 | 0% | 8130 | 0% | 7590 | -7% | 8110 | 0% | 7410 | -9% |
| | SB | 7240 | 8100 | 8490 | 8400 | -1% | 8450 | 0% | 8370 | -1% | 8480 | 0% | 8470 | 0% |
| - Dedham St, n. of Washington St | NB | 280 | 310 | 290 | 300 | 3% | 290 | 0% | 270 | -7% | 350 | 21% | 270 | -7% |
| | SB | 610 | 660 | 710 | 710 | 0% | 700 | -1% | 690 | -3% | 680 | -4% | 650 | -8% |
| - Dedham St, s. of University Ave | NB | 440 | 490 | 470 | 470 | 0% | 490 | 4% | 480 | 2% | 540 | 15% | 300 | -36% |
| | SB | 750 | 850 | 750 | 720 | -4% | 730 | -3% | 740 | -1% | 740 | -1% | 980 | 31% |
| - University Ave, n. of Blue Hill Dr | NB | 460 | 660 | 650 | 640 | -2% | 640 | -2% | 640 | -2% | 660 | 2% | 610 | -6% |
| | SB | 410 | 470 | 1110 | 1010 | -9% | 770 | -31% | 810 | -27% | 790 | -29% | 970 | -13% |
| - University Ave, s. of Blue Hill Dr | NB | 1130 | 1520 | 1450 | 1460 | 1% | 1500 | 3% | 1490 | 3% | 1490 | 3% | 1170 | -19% |
| | SB | 260 | 350 | 470 | 450 | -4% | 410 | -13% | 460 | -2% | 420 | -11% | 430 | -9% |
| - Blue Hill Dr, w. of University Ave | EB | 130 | 180 | 210 | 220 | 5% | 210 | 0% | 240 | 14% | 200 | -5% | 240 | 14% |
| | WB | 950 | 1150 | 1660 | 1590 | -4% | 1230 | -26% | 1360 | -18% | 1180 | -29% | 1340 | -19% |

(Robert Sievert, 971207, GrStBrdg.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

| | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 f | | "Package" 3 g | | "Package" 3 h | | "Package" 3 i | | "Package" 3 j | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| PM Peak Hour Volumes (cont.): | | | | | | | | | | | | | | |
| - Greenlodge Street over rail line | EB | -- | -- | -- | 110 | -- | 340 | -- | 550 | -- | 80 | -- | 1100 | -- |
| | WB | -- | -- | -- | 10 | -- | 10 | -- | 70 | -- | 10 | -- | 70 | -- |
| - Elm St, s. of Greenlodge St | NB | 60 | 10 | 10 | 0 | -100% | 0 | -100% | 0 | -100% | 0 | -100% | 30 | 200% |
| | SB | 50 | 40 | 40 | 20 | -50% | 20 | -50% | 0 | -100% | 30 | -25% | 0 | -100% |
| - Greenlodge St, w. of Route 138 | EB | 130 | 120 | 120 | 100 | -17% | 80 | -33% | 60 | -50% | 70 | -42% | 30 | -75% |
| | WB | 50 | 50 | 50 | 30 | -40% | 40 | -20% | 50 | 0% | 30 | -40% | 40 | -20% |
| - Route 138, n. of Greenlodge St | NB | 1390 | 1490 | 1440 | 1430 | -1% | 1440 | 0% | 1430 | -1% | 1410 | -2% | 1480 | 3% |
| | SB | 1410 | 1550 | 1560 | 1570 | 1% | 1570 | 1% | 1600 | 3% | 1490 | -4% | 1620 | 4% |
| - Route 138, s. of Greenlodge St | NB | 1330 | 1440 | 1430 | 1430 | 0% | 1440 | 1% | 1460 | 2% | 1410 | -1% | 1480 | 3% |
| | SB | 1400 | 1580 | 1550 | 1650 | 6% | 1620 | 5% | 1620 | 5% | 1540 | -1% | 1610 | 4% |
| - Route 128 (I-93), n. of Route 138 | NB | 7150 | 8170 | 8150 | 8120 | 0% | 8130 | 0% | 8130 | 0% | 7410 | -9% | 8150 | 0% |
| | SB | 7240 | 8100 | 8490 | 8420 | -1% | 8430 | -1% | 8450 | 0% | 8480 | 0% | 8450 | 0% |
| - Dedham St, n. of Washington St | NB | 280 | 310 | 290 | 320 | 10% | 320 | 10% | 290 | 0% | 270 | -7% | 300 | 3% |
| | SB | 610 | 660 | 710 | 640 | -10% | 710 | 0% | 700 | -1% | 640 | -10% | 720 | 1% |
| - Dedham St, s. of University Ave | NB | 440 | 490 | 470 | 480 | 2% | 510 | 9% | 490 | 4% | 300 | -36% | 390 | -17% |
| | SB | 750 | 850 | 750 | 650 | -13% | 720 | -4% | 730 | -3% | 970 | 29% | 750 | 0% |
| - University Ave, n. of Blue Hill Dr | NB | 460 | 660 | 650 | 650 | 0% | 640 | -2% | 640 | -2% | 610 | -6% | 660 | 2% |
| | SB | 410 | 470 | 1110 | 990 | -11% | 760 | -32% | 770 | -31% | 970 | -13% | 400 | -64% |
| - University Ave, s. of Blue Hill Dr | NB | 1130 | 1520 | 1450 | 1470 | 1% | 1490 | 3% | 1500 | 3% | 1170 | -19% | 1230 | -15% |
| | SB | 260 | 350 | 470 | 370 | -21% | 390 | -17% | 410 | -13% | 430 | -9% | 420 | -11% |
| - Blue Hill Dr, w. of University Ave | EB | 130 | 180 | 210 | 150 | -29% | 210 | 0% | 210 | 0% | 240 | 14% | 170 | -19% |
| | WB | 950 | 1150 | 1660 | 1600 | -4% | 1420 | -14% | 1220 | -27% | 1340 | -19% | 320 | -81% |

(Robert Sievert, 971207, GrStBrdg.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**GREENLODGE STREET / I-95 SLIP RAMPS: Northbound OFF, Southbound ON**
**(Included in "Packages" 3 b, 3 c, 3 d, 3 g, 3 h, 3 j)**

Element 11

| | | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 b Volume | % Ch. | "Package" 3 c Volume | % Ch. | "Package" 3 d Volume | % Ch. | "Package" 3 g Volume | % Ch. |
| PM Peak Hour Volumes: | | | | | | | | | | | | |
| - I-95 NB to Greenlodge St Off-Ramp | | -- | -- | -- | 80 | -- | 100 | -- | 60 | -- | 30 | -- |
| - Greenlodge St to I-95 SB On-Ramp | | -- | -- | -- | 550 | -- | -- | -- | 510 | -- | 290 | -- |
| - I-95 NB to Rt 128 NB ramp | | 1230 | 1550 | 1560 | 1520 | -3% | 1520 | -3% | 1530 | -2% | 1550 | -1% |
| - I-95 NB to Rt 128 SB ramp | | 1640 | 1800 | 1800 | 1790 | -1% | 1760 | -2% | 1800 | 0% | 1790 | -1% |
| - Rt 128 NB to I-95 SB ramp | | 2690 | 3100 | 3100 | 3080 | -1% | 2580 | -17% | 3100 | 0% | 3130 | 1% |
| - Rt 128 SB to I-95 SB ramp | | 1920 | 2390 | 2470 | 2050 | -17% | 2230 | -10% | 2070 | -16% | 2190 | -11% |
| - I-95 NB, n. of Neponset St | NB | 2860 | 3350 | 3360 | 3380 | 1% | 3370 | 0% | 3390 | 1% | 3370 | 0% |
| | SB | 4600 | 5480 | 5560 | 5690 | 2% | 5660 | 2% | 5680 | 2% | 5610 | 1% |
| - Greenlodge Street over rail line | EB | -- | -- | -- | 550 | -- | 390 | -- | 510 | -- | 340 | -- |
| | WB | -- | -- | -- | 70 | -- | 80 | -- | 60 | -- | 10 | -- |
| - Elm St, s. of Greenlodge St | NB | 60 | 60 | 60 | 0 | -100% | 0 | -100% | 0 | -100% | 0 | -100% |
| | SB | 50 | 40 | 40 | 0 | -100% | 0 | -100% | 0 | -100% | 20 | -50% |
| - Greenlodge St, w. of Route 138 | EB | 130 | 120 | 120 | 60 | -50% | 20 | -83% | 20 | -83% | 80 | -33% |
| | WB | 50 | 50 | 50 | 50 | 0% | 40 | -20% | 30 | -40% | 40 | -20% |
| - Dedham St, n. of Washington St | NB | 280 | 310 | 290 | 290 | 0% | 270 | -7% | 350 | 21% | 320 | 10% |
| | SB | 610 | 660 | 710 | 700 | -1% | 690 | -3% | 680 | -4% | 710 | 0% |
| - Dedham St, s. of University Ave | NB | 440 | 490 | 470 | 490 | 4% | 480 | 2% | 540 | 15% | 510 | 9% |
| | SB | 750 | 850 | 750 | 730 | -3% | 740 | -1% | 740 | -1% | 720 | -4% |
| - University Ave, n. of Blue Hill Dr | NB | 460 | 660 | 650 | 640 | -2% | 640 | -2% | 660 | 2% | 640 | -2% |
| | SB | 410 | 470 | 1110 | 770 | -31% | 810 | -27% | 790 | -29% | 760 | -32% |
| - University Ave, s. of Blue Hill Dr | NB | 1130 | 1520 | 1450 | 1500 | 3% | 1490 | 3% | 1490 | 3% | 1490 | 3% |
| | SB | 260 | 350 | 470 | 410 | -13% | 460 | -2% | 420 | -11% | 390 | -17% |
| - Blue Hill Dr, w. of University Ave | EB | 130 | 180 | 210 | 210 | 0% | 240 | 14% | 200 | -5% | 210 | 0% |
| | WB | 950 | 1150 | 1660 | 1230 | -26% | 1360 | -18% | 1180 | -29% | 1420 | -14% |

(Robert Sievert, 971207, Grl95Rmp.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

| | | NO-BUILD | | | BUILD | | | |
|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 h Volume | % Ch. | "Package" 3 j Volume | % Ch. |
| PM Peak Hour Volumes (cont.): | | | | | | | | |
| - I-95 NB to Greenlodge St Off-Ramp | | -- | -- | -- | 80 | -- | 80 | -- |
| - Greenlodge St to I-95 SB On-Ramp | | -- | -- | -- | 550 | -- | 420 | -- |
| - I-95 NB to Rt 128 NB ramp | | 1230 | 1550 | 1560 | 1520 | -3% | 1520 | -3% |
| - I-95 NB to Rt 128 SB ramp | | 1640 | 1800 | 1800 | 1790 | -1% | 1790 | -1% |
| - Rt 128 NB to I-95 SB ramp | | 2690 | 3100 | 3100 | 3080 | -1% | 3090 | 0% |
| - Rt 128 SB to I-95 SB ramp | | 1920 | 2390 | 2470 | 2050 | -17% | 2060 | -17% |
| - I-95 NB, n. of Neponset St | NB | 2860 | 3350 | 3360 | 3380 | 1% | 3380 | 1% |
| | SB | 4600 | 5480 | 5560 | 5690 | 2% | 5570 | 0% |
| - Greenlodge Street over rail line | EB | -- | -- | -- | 550 | -- | 1100 | -- |
| | WB | -- | -- | -- | 70 | -- | 70 | -- |
| - Elm St, s. of Greenlodge St | NB | 60 | 60 | 60 | 0 | -100% | 30 | -50% |
| | SB | 50 | 40 | 40 | 0 | -100% | 0 | -100% |
| - Greenlodge St, w. of Route 138 | EB | 130 | 120 | 120 | 60 | -50% | 30 | -75% |
| | WB | 50 | 50 | 50 | 50 | 0% | 40 | -20% |
| - Dedham St, n. of Washington St | NB | 280 | 310 | 290 | 290 | 0% | 300 | 3% |
| | SB | 610 | 660 | 710 | 700 | -1% | 720 | 1% |
| - Dedham St, s. of University Ave | NB | 440 | 490 | 470 | 490 | 4% | 390 | -17% |
| | SB | 750 | 850 | 750 | 730 | -3% | 750 | 0% |
| - University Ave, n. of Blue Hill Dr | NB | 460 | 660 | 650 | 640 | -2% | 660 | 2% |
| | SB | 410 | 470 | 1110 | 770 | -31% | 400 | -64% |
| - University Ave, s. of Blue Hill Dr | NB | 1130 | 1520 | 1450 | 1500 | 3% | 1230 | -15% |
| | SB | 260 | 350 | 470 | 410 | -13% | 420 | -11% |
| - Blue Hill Dr, w. of University Ave | EB | 130 | 180 | 210 | 210 | 0% | 170 | -19% |
| | WB | 950 | 1150 | 1660 | 1220 | -27% | 320 | -81% |

(Robert Sievert, 971207, Gr195Rmp.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

## "UNUSED BRIDGE" OVER ROUTE 128: Connecting Greenlodge St with Royall St and I-95 SB (Included in "Package" 3 c)

Element 12

| | | NO-BUILD | | | BUILD | |
|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 c Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | |
| - Greenlodge St to I-95 SB | | -- | -- | -- | 0 | -- |
| - Greenlodge St to Royall St | | -- | -- | -- | 450 | -- |
| - Royall St to I-95 SB | | -- | -- | -- | 150 | -- |
| - Royall St to Greenlodge St | | -- | -- | -- | 20 | -- |
| - Blue Hill Dr to Rt 128 SB On-Ramp | | 170 | 220 | 250 | 230 | -8% |
| - Rt 128 SB to Blue Hill Dr Off-Ramp | | 420 | 560 | 840 | 1050 | 25% |
| - Route 128 SB to I-95 SB ramp | | 1100 | 1390 | 1400 | 1400 | 0% |
| - Route 128, n. of Route 138 | NB | 7780 | 8660 | 9060 | 8920 | -2% |
| | SB | 6740 | 7840 | 7770 | 7280 | -6% |
| - Royall St, e. of Green St | EB | -- | 0 | 0 | 430 | -- |
| | WB | -- | 0 | 0 | 50 | -- |
| - Green St, n. of Royall St | NB | -- | 0 | 0 | 20 | -- |
| | SB | -- | 0 | 0 | 120 | -- |
| - Greenlodge Street over rail line | EB | -- | -- | -- | 250 | -- |
| | WB | -- | -- | -- | 650 | -- |
| - Elm St, s. of Greenlodge St | NB | 80 | 90 | 90 | 30 | -67% |
| | SB | 60 | 60 | 60 | 0 | -- |
| - Greenlodge St, w. of Route 138 | EB | 50 | 70 | 70 | 70 | 0% |
| | WB | 120 | 120 | 120 | 30 | -75% |
| **PM Peak Hour Volumes:** | | | | | | |
| - Greenlodge St to I-95 SB | | -- | -- | -- | 290 | -- |
| - Greenlodge St to Royall St | | -- | -- | -- | 150 | -- |
| - Royall St to I-95 SB | | -- | -- | -- | 570 | -- |
| - Royall St to Greenlodge St | | -- | -- | -- | 10 | -- |
| - Blue Hill Dr to Rt 128 SB On-Ramp | | 1040 | 1230 | 1740 | 1440 | -17% |
| - Rt 128 SB to Blue Hill Dr Off-Ramp | | 80 | 120 | 190 | 220 | 16% |
| - Route 128 SB to I-95 SB ramp | | 1920 | 2390 | 2470 | 2230 | -10% |
| - Route 128, n. of Route 138 | NB | 7150 | 8170 | 8150 | 7590 | -7% |
| | SB | 7240 | 8100 | 8490 | 8370 | -1% |
| - Royall St, e. of Green St | EB | -- | 0 | 0 | 70 | -- |
| | WB | -- | 0 | 0 | 340 | -- |
| - Green St, n. of Royall St | NB | -- | 0 | 0 | 80 | -- |
| | SB | -- | 0 | 0 | 240 | -- |
| - Greenlodge Street over rail line | EB | -- | -- | -- | 390 | -- |
| | WB | -- | -- | -- | 80 | -- |
| - Elm St, s. of Greenlodge St | NB | 60 | 60 | 60 | 0 | -100% |
| | SB | 50 | 40 | 40 | 0 | -100% |
| - Greenlodge St, w. of Route 138 | EB | 130 | 120 | 120 | 20 | -83% |
| | WB | 50 | 50 | 50 | 40 | -20% |

(Robert Sievert, 971208, UnusedBr.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**GREENLODGE STREET: One-way WB between Elm Street and new I-95 slip ramp area (Included in "Package" 3 c)**

**Element 13**

| | | NO-BUILD | | | BUILD | |
|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 c Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | |
| - Elm St, s. of Greenlodge St | NB | 80 | 90 | 90 | 30 | -67% |
| | SB | 60 | 60 | 60 | 0 | -100% |
| - Greenlodge St, w. of Route 13 | EB | 50 | 70 | 70 | 70 | 0% |
| | WB | 120 | 120 | 120 | 30 | -75% |
| - Route 138, s. of Greenlodge St | NB | 1540 | 1750 | 1750 | 1790 | 2% |
| | SB | 1140 | 1220 | 1210 | 1190 | -2% |
| - Route 138, n. of Greenlodge St | NB | 1560 | 1780 | 1810 | 1850 | 2% |
| | SB | 1240 | 1280 | 1230 | 1210 | -2% |
| - Greenlodge St, w. of Elm St | WB | 120 | 130 | 130 | 10 | -92% |
| - Greenlodge St, over I-95 | WB | 120 | 130 | 130 | 830 | 538% |
| - Greenlodge St, over rail line | EB | -- | -- | -- | 250 | -- |
| | WB | -- | -- | -- | 650 | -- |
| **PM Peak Hour Volumes:** | | | | | | |
| - Elm St, s. of Greenlodge St | NB | 60 | 60 | 60 | 0 | -100% |
| | SB | 50 | 40 | 40 | 0 | -100% |
| - Greenlodge St, w. of Route 13 | EB | 130 | 120 | 120 | 20 | -83% |
| | WB | 50 | 50 | 50 | 40 | -20% |
| - Route 138, s. of Greenlodge St | NB | 1330 | 1440 | 1430 | 1430 | 0% |
| | SB | 1400 | 1580 | 1550 | 1560 | 1% |
| - Route 138, n. of Greenlodge St | NB | 1390 | 1490 | 1440 | 1430 | -1% |
| | SB | 1410 | 1550 | 1560 | 1580 | 1% |
| - Greenlodge St, w. of Elm St | WB | 20 | 20 | 20 | 10 | -50% |
| - Greenlodge St, over I-95 | WB | 20 | 20 | 20 | 110 | 450% |
| - Greenlodge St, over rail line | EB | -- | -- | -- | 390 | -- |
| | WB | -- | -- | -- | 80 | -- |

(Robert Sievert, 971208, Grlg1Way.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**GREENLODGE STREET: Closed between Elm Street and new I-95 slip ramp area (Included in "Package" 3 d)**

Element 14

| | | NO-BUILD | | | BUILD | |
|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 d Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | |
| - Elm St, s. of Greenlodge St | NB | 80 | 90 | 90 | 30 | -67% |
| | SB | 60 | 60 | 60 | 0 | -100% |
| - Greenlodge St, w. of Route 13 | EB | 50 | 70 | 70 | 70 | 0% |
| | WB | 120 | 120 | 120 | 30 | -75% |
| - Route 138, s. of Greenlodge St | NB | 1540 | 1750 | 1750 | 1750 | 0% |
| | SB | 1140 | 1220 | 1210 | 1210 | 0% |
| - Route 138, n. of Greenlodge St | NB | 1560 | 1780 | 1810 | 1820 | 1% |
| | SB | 1240 | 1280 | 1230 | 1230 | 0% |
| - Greenlodge St, over I-95 | WB | 120 | 130 | 130 | 680 | 423% |
| - Greenlodge St, over rail line | EB | -- | -- | -- | 40 | -- |
| | WB | -- | -- | -- | 680 | -- |
| **PM Peak Hour Volumes:** | | | | | | |
| - Elm St, s. of Greenlodge St | NB | 60 | 60 | 60 | 0 | -100% |
| | SB | 50 | 40 | 40 | 0 | -100% |
| - Greenlodge St, w. of Route 13 | EB | 130 | 120 | 120 | 20 | -83% |
| | WB | 50 | 50 | 50 | 30 | -40% |
| - Route 138, s. of Greenlodge St | NB | 1330 | 1440 | 1430 | 1610 | 13% |
| | SB | 1400 | 1580 | 1550 | 1530 | -1% |
| - Route 138, n. of Greenlodge St | NB | 1390 | 1490 | 1440 | 1620 | 13% |
| | SB | 1410 | 1550 | 1560 | 1540 | -1% |
| - Greenlodge St, over I-95 | WB | 20 | 20 | 20 | 60 | 200% |
| - Greenlodge St, over rail line | EB | -- | -- | -- | 510 | -- |
| | WB | -- | -- | -- | 60 | -- |

(Robert Sievert, 971208, GrlgClsd.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

## RAMP BETWEEN I-95 NB and ROUTE 128 (I-95) NB ("Dead Man's Curve"): Rebuilt structure (Included in "Package" 3 d)

Element 15

| | | NO-BUILD | | | BUILD | |
|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 d Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | |
| - I-95 NB, n. of Neponset St | | 4900 | 5960 | 6080 | 6510 | 7% |
| - I-95 NB, s. of Route 128 | | 4900 | 5960 | 6080 | 5830 | -4% |
| - I-95 NB to Route 128 NB | | 1960 | 2580 | 2740 | 2620 | -4% |
| - Route 128 NB, n. of I-95 | | 8240 | 9590 | 10140 | 9920 | -2% |
| - Route 128 NB, n. of University Ave | | 7610 | 8850 | 8880 | 9050 | 2% |
| - Neponset St., w. of Chapman S | EB | 910 | 1040 | 1010 | 950 | -6% |
| | WB | 1280 | 1190 | 1280 | 1360 | 6% |
| - Neponset St., w. of I-95 | EB | -- | 790 | 790 | 770 | -3% |
| | WB | -- | 1800 | 1880 | 1580 | -16% |
| **PM Peak Hour Volumes:** | | | | | | |
| - I-95 NB, n. of Neponset St | | 2860 | 3350 | 3360 | 3390 | 1% |
| - I-95 NB, s. of Route 128 | | 2860 | 3350 | 3360 | 3330 | -1% |
| - I-95 NB to Route 128 NB | | 1230 | 1550 | 1560 | 1530 | -2% |
| - Route 128 NB, n. of I-95 | | 5690 | 6620 | 6620 | 6540 | -1% |
| - Route 128 NB, n. of University Ave | | 5870 | 7100 | 7290 | 7300 | 0% |
| - Neponset St., w. of Chapman S | EB | 1200 | 1210 | 1200 | 1230 | 3% |
| | WB | 1040 | 1140 | 1200 | 1190 | -1% |
| - Neponset St., w. of I-95 | EB | -- | 1360 | 1420 | 1390 | -2% |
| | WB | -- | 1270 | 1330 | 1340 | 1% |

(Robert Sievert, 971208, DMCurve.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**BLUE HILL DRIVE: Closed west of Route 128 SB ramps (i.e., creation of a cul-de-sac) (Included in "Package" 3 d)**

**Element 16**

| | | NO-BUILD | | | BUILD | |
|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 d Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | |
| - Blue Hill Dr, e. of Canton St | EB | 90 | 130 | 120 | 0 | -100% |
| | WB | 40 | 50 | 10 | 0 | -100% |
| - Canton St, s. of Blue Hill Dr | NB | 470 | 650 | 730 | 630 | -14% |
| | SB | 360 | 510 | 480 | 470 | -2% |
| - Blue Hill Dr to Rt 128 SB On-Ramp | | 170 | 220 | 250 | 150 | -40% |
| - Rt 128 SB Off-Ramp to Blue Hill Dr | | 420 | 560 | 840 | 850 | 1% |
| - Route 128 (I-95) SB, n. of Blue Hill Dr | | 5160 | 6190 | 6420 | 6500 | 1% |
| - Blue Hill Dr, w. of University Ave | EB | 400 | 510 | 820 | 760 | -7% |
| | WB | 160 | 190 | 200 | 150 | -25% |
| - University Ave, n. of Blue Hill Dr | NB | 430 | 520 | 1040 | 990 | -5% |
| | SB | 710 | 860 | 850 | 690 | -19% |
| - University Ave, s. of Blue Hill Dr | NB | 410 | 520 | 730 | 700 | -4% |
| | SB | 920 | 1180 | 1170 | 1370 | 17% |
| - Greenlodge St, over rail line | EB | -- | -- | -- | 40 | -- |
| | WB | -- | -- | -- | 680 | -- |
| **PM Peak Hour Volumes:** | | | | | | |
| - Blue Hill Dr, e. of Canton St | EB | 250 | 200 | 210 | 170 | -19% |
| | WB | 50 | 50 | 40 | 0 | -100% |
| - Canton St, s. of Blue Hill Dr | NB | 600 | 720 | 670 | 770 | 15% |
| | SB | 710 | 810 | 820 | 800 | -2% |
| - Blue Hill Dr to Rt 128 SB On-Ramp | | 1040 | 1230 | 1740 | 1160 | -33% |
| - Rt 128 SB Off-Ramp to Blue Hill Dr | | 80 | 120 | 190 | 190 | 0% |
| - Route 128 (I-95) SB, n. of Blue Hill Dr | | 6640 | 7590 | 7600 | 7780 | 2% |
| - Blue Hill Dr, w. of University Ave | EB | 130 | 180 | 210 | 200 | -5% |
| | WB | 950 | 1150 | 1660 | 1180 | -29% |
| - University Ave, n. of Blue Hill Dr | NB | 460 | 660 | 650 | 660 | 2% |
| | SB | 410 | 470 | 1110 | 790 | -29% |
| - University Ave, s. of Blue Hill Dr | NB | 1130 | 1520 | 1450 | 1490 | 3% |
| | SB | 260 | 350 | 470 | 420 | -11% |
| - Greenlodge St, over rail line | EB | -- | -- | -- | 510 | -- |
| | WB | -- | -- | -- | 60 | -- |

(Robert Sievert, 971208, CuldeSac.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**PONKAPOAG @ ROUTE 128 (I-93) INTERCHANGE : Close interchange**
**(Included in "Packages" 2 b, 3 d)**

Element 17

| | | NO-BUILD | | | BUILD | | | |
|---|---|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 b Volume | % Ch. | "Package" 3 d Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | | | |
| - Ponkapoag Trail, n. of Rt 128 | NB | -- | 710 | 690 | 0 | -100% | 0 | -100% |
| | SB | -- | 140 | 140 | 0 | -100% | 0 | -100% |
| - Hillside St, e. of Ponkapoag Tra | EB | 490 | 520 | 510 | 510 | 0% | 510 | 0% |
| | WB | 250 | 460 | 460 | 460 | 0% | 460 | 0% |
| - Royall St, e. of Route 138 | EB | 60 | 70 | 60 | 730 | 1117% | 760 | 1167% |
| | WB | 390 | 560 | 590 | 740 | 25% | 730 | 24% |
| - Rt 128 (I-93), s. of Route 138 | NB | 7460 | 8360 | 8670 | 9120 | 5% | 9120 | 5% |
| | SB | 6050 | 6800 | 6740 | 6640 | -1% | 6640 | -1% |
| - Route 138, s. of Royall St | NB | 1810 | 2430 | 2410 | 3080 | 28% | 3110 | 29% |
| | SB | 1110 | 1200 | 1200 | 1350 | 13% | 1340 | 12% |
| **PM Peak Hour Volumes:** | | | | | | | | |
| - Ponkapoag Trail, n. of Rt 128 | NB | -- | 250 | 250 | 0 | -100% | 0 | -100% |
| | SB | -- | 690 | 720 | 0 | -100% | 0 | -100% |
| - Hillside St, e. of Ponkapoag Tra | EB | 230 | 290 | 290 | 290 | 0% | 290 | 0% |
| | WB | 520 | 570 | 560 | 560 | 0% | 560 | 0% |
| - Royall St, e. of Route 138 | EB | 250 | 430 | 390 | 600 | 54% | 550 | 41% |
| | WB | 350 | 430 | 410 | 800 | 95% | 800 | 95% |
| - Rt 128, s. of Route 138 | NB | 6520 | 7250 | 7260 | 7260 | 0% | 7260 | 0% |
| | SB | 7430 | 8330 | 8630 | 9110 | 6% | 9110 | 6% |
| - Route 138, s. of Royall St | NB | 950 | 1070 | 1080 | 1380 | 28% | 1320 | 22% |
| | SB | 1790 | 2280 | 2230 | 2710 | 22% | 2710 | 22% |

(Robert Sievert, 971208, Ponkapog.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**ROUTE 138 @ RANDOLPH STREET: Expanding approaches at intersection (Included in "Package" 2 d)**

Element 18

| | | NO-BUILD | | | BUILD | |
|---|---|---|---|---|---|---|
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 d Volume | % Ch. |
| **AM Peak Hour Volumes:** | | | | | | |
| - Route 138, n. of Randolph St | NB | 750 | 910 | 880 | 970 | 10% |
| | SB | 780 | 930 | 930 | 890 | -4% |
| - Route 138, s. of Randolph St | NB | 740 | 900 | 920 | 920 | 0% |
| | SB | 930 | 1110 | 1090 | 1100 | 1% |
| - Randolph St, w. of Route 138 | EB | 440 | 510 | 470 | 500 | 6% |
| | WB | 470 | 420 | 420 | 420 | 0% |
| - Randolph St, e. of Route 138 | EB | 370 | 380 | 360 | 360 | 0% |
| | WB | 570 | 520 | 530 | 530 | 0% |
| - Washington St, s. of Randolph S | NB | 960 | 1190 | 1130 | 1180 | 4% |
| | SB | 610 | 580 | 490 | 550 | 12% |
| - Washington St, s. of Route 138 | NB | 690 | 920 | 900 | 930 | 3% |
| | SB | 280 | 290 | 290 | 200 | -31% |
| **PM Peak Hour Volumes:** | | | | | | |
| - Route 138, n. of Randolph St | NB | 830 | 930 | 910 | 920 | 1% |
| | SB | 860 | 930 | 920 | 920 | 0% |
| - Route 138, s. of Randolph St | NB | 990 | 1070 | 1080 | 1080 | 0% |
| | SB | 780 | 870 | 870 | 870 | 0% |
| - Randolph St, w. of Route 138 | EB | 630 | 560 | 520 | 520 | 0% |
| | WB | 410 | 420 | 430 | 420 | -2% |
| - Randolph St, e. of Route 138 | EB | 880 | 750 | 740 | 740 | 0% |
| | WB | 430 | 410 | 430 | 430 | 0% |
| - Washington St, s. of Randolph S | NB | 890 | 890 | 860 | 790 | -8% |
| | SB | 1050 | 1180 | 1150 | 1090 | -5% |
| - Washington St, s. of Route 138 | NB | 520 | 590 | 600 | 470 | -22% |
| | SB | 570 | 700 | 690 | 620 | -10% |

(Robert Sievert, 971208, Randolph.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**UNIVERSITY AVENUE / I-95 / ROUTE 128 STATION STUDY**
**1995 and 2020 Volumes on Selected Roadways: No-Build and Various Build Scenarios**
**(PM PEAK HOUR, WITHOUT the Greenlodge Street Bridge)**

("PACKAGES" 2 a -- 2 d)

| | | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITHOUT the Greenlodge Street Bridge | | | | | | | |
| | | 1995 Balanced | 2020 WITHOUT | 2020 WITH New | "Package" 2 a | | "Package" 2 b | | "Package" 2 c | | "Package" 2 d | |
| HIGHWAYS | | Counts | New Garage | Garage | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Route 128 (I-95/I-93) | | | | | | | | | | | | |
| 1 - n. of Route 1 | NB | 6130 | 7530 | 7680 | 7680 | 0% | 7680 | 0% | 7680 | 0% | 7680 | 0% |
| | SB | 6470 | 7590 | 7630 | 7630 | 0% | 7630 | 0% | 7630 | 0% | 7630 | 0% |
| 2 - n. of University Ave/ | NB | 5870 | 7100 | 7290 | 7300 | 0% | 7370 | 1% | 7210 | -1% | 7360 | 1% |
| Blue Hill Drive | SB | 6640 | 7590 | 7600 | 7610 | 0% | 7620 | 0% | 7400 | -3% | 7580 | 0% |
| 3 - n. of I-95 | NB | 5690 | 6620 | 6620 | 6620 | 0% | 6680 | 1% | 6340 | -4% | 6620 | 0% |
| | SB | 7520 | 8690 | 9160 | 9260 | 1% | 8880 | -3% | 8960 | -2% | 8800 | -4% |
| 4 - n. of Route 138 | NB | 7150 | 8170 | 8150 | 8130 | 0% | 8090 | -1% | 7450 | -9% | 8130 | 0% |
| | SB | 7240 | 8100 | 8490 | 8490 | 0% | 8520 | 0% | 8470 | 0% | 8540 | 1% |
| 5 - s. of Ponkapoag Trail | NB | 6520 | 7250 | 7260 | 7260 | 0% | 7260 | 0% | 7260 | 0% | 7260 | 0% |
| | SB | 7820 | 8780 | 9110 | 9110 | 0% | 9110 | 0% | 9110 | 0% | 9110 | 0% |
| I-95 | | | | | | | | | | | | |
| 6 - s. of Route 128 | NB | 2860 | 3350 | 3360 | 3350 | 0% | 3550 | 6% | 3360 | 0% | 3830 | 14% |
| | SB | 4600 | 5480 | 5560 | 5630 | 1% | 5330 | -4% | 5500 | -1% | 5610 | 1% |
| 7 - s. of Neponset Street | NB | 2620 | 3190 | 3200 | 3200 | 0% | 3200 | 0% | 3200 | 0% | 3200 | 0% |
| | SB | 4670 | 5660 | 5810 | 5810 | 0% | 5810 | 0% | 5810 | 0% | 5810 | 0% |
| Route 1 | | | | | | | | | | | | |
| 8 - n. of Route 128 | NB | 1740 | 1780 | 1810 | 1810 | 0% | 1810 | 0% | 1810 | 0% | 1810 | 0% |
| | SB | 2440 | 2410 | 2450 | 2450 | 0% | 2450 | 0% | 2450 | 0% | 2450 | 0% |
| 9 - s. of Route 128 | NB | 2200 | 2430 | 2440 | 2430 | 0% | 2430 | 0% | 2450 | 0% | 2410 | -1% |
| | SB | 2430 | 2550 | 2620 | 2650 | 1% | 2610 | 0% | 2790 | 6% | 2650 | 1% |
| 10 - s. of Everett Street | NB | 1610 | 1760 | 1750 | 1770 | 1% | 1760 | 1% | 1780 | 2% | 1730 | -1% |
| | SB | 2510 | 2630 | 2650 | 2630 | -1% | 2540 | -4% | 2780 | 5% | 2510 | -5% |
| 11 - s. of Dean Street | NB | 1590 | 1640 | 1640 | 1640 | 0% | 1640 | 0% | 1640 | 0% | 1640 | 0% |
| | SB | 1970 | 2100 | 2080 | 2090 | 0% | 2080 | 0% | 2070 | 0% | 2090 | 0% |

(Robert Sievert, 971209, PM%ChWO.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

## (PM PEAK HOUR, WITHOUT the Greenlodge Street Bridge)

("PACKAGES" 2 a -- 2 d)

| RAMPS | | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITHOUT the Greenlodge Street Bridge | | | | | | | |
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 a | | "Package" 2 b | | "Package" 2 c | | "Package" 2 d | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| I-95 From/To Rt 128 (I-95/I-93) | | | | | | | | | | | | |
| 12 - I-95 NB to Route 128 NB | | 1230 | 1550 | 1560 | 1560 | 0% | 1640 | 5% | 1570 | 1% | 1780 | 14% |
| - I-95 NB to Route 128 SB | | 1640 | 1800 | 1800 | 1790 | -1% | 1910 | 6% | 1800 | 0% | 2050 | 14% |
| - Route 128 NB to I-95 SB | | 2690 | 3100 | 3100 | 3070 | -1% | 3050 | -2% | 2660 | -14% | 3300 | 6% |
| - Route 128 SB to I-95 SB | | 1920 | 2390 | 2470 | 2560 | 4% | 2280 | -8% | 2280 | -8% | 2310 | -6% |
| Rt 128 SB From/To Blue Hill Drive | | | | | | | | | | | | |
| 13 - On-Ramp (TO Rt 128 SB) | | 1040 | 1230 | 1740 | 1770 | 2% | 1480 | -15% | 1750 | 1% | 1420 | -18% |
| - Off-Ramp (FROM Rt 128 SB) | | 80 | 120 | 190 | 120 | -37% | 220 | 16% | 190 | 0% | 190 | 0% |
| **LOCAL ROADWAYS** | | | | | | | | | | | | |
| University Avenue/Everett Street | | | | | | | | | | | | |
| 14 - n. of Rail Stn driveways | NB | 480 | 690 | 910 | 910 | 0% | 880 | -3% | 910 | 0% | 890 | -2% |
| | SB | 190 | 210 | 230 | 230 | 0% | 190 | -17% | 230 | 0% | 150 | -35% |
| 15 - s. of Rail Stn driveways | NB | 460 | 660 | 650 | 650 | 0% | 610 | -6% | 650 | 0% | 610 | -6% |
| | SB | 410 | 470 | 1110 | 1110 | 0% | 1060 | -5% | 1100 | -1% | 1000 | -10% |
| 16 - s. of Blue Hill Drive | NB | 1130 | 1520 | 1450 | 1450 | 0% | 1170 | -19% | 1460 | 1% | 1090 | -25% |
| | SB | 260 | 350 | 470 | 400 | -15% | 460 | -2% | 460 | -2% | 360 | -23% |
| 17 - s. of Canton/ | NB/EB | 350 | 350 | 360 | 370 | 3% | 360 | 0% | 350 | -3% | 360 | 0% |
| Dedham Street | SB/WB | 420 | 500 | 560 | 550 | -2% | 500 | -11% | 530 | -5% | 510 | -9% |
| 18 - e. of Route 1 | EB | 470 | 470 | 480 | 480 | 0% | 470 | -2% | 470 | -2% | 480 | 0% |
| | WB | 770 | 880 | 960 | 950 | -1% | 870 | -9% | 930 | -3% | 880 | -8% |
| 19 - w. of Route 1 | EB | 600 | 610 | 620 | 580 | -6% | 600 | -3% | 590 | -5% | 650 | 5% |
| | WB | 460 | 580 | 660 | 700 | 6% | 690 | 5% | 680 | 3% | 790 | 20% |

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

(Robert Sievert, 971209, PM%ChWO.xls)

**(PM PEAK HOUR, WITHOUT the Greenlodge Street Bridge)**

("PACKAGES" 2 a -- 2 d)

| LOCAL ROADWAYS (cont.) | | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITHOUT the Greenlodge Street Bridge | | | | | | | |
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 a | | "Package" 2 b | | "Package" 2 c | | "Package" 2 d | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Blue Hill Drive | | | | | | | | | | | | |
| 20 - e. of Route 128 SB ramps | EB | 120 | 170 | 210 | 140 | -33% | 230 | 10% | 200 | -5% | 210 | 0% |
| | WB | 940 | 1130 | 1650 | 1640 | -1% | 1390 | -16% | 1650 | 0% | 1320 | -20% |
| 21 - w. of Route 128 SB ramp | EB | 200 | 210 | 180 | 180 | 0% | 170 | -6% | 170 | -6% | 180 | 0% |
| | WB | 70 | 70 | 60 | 40 | -33% | 70 | 17% | 60 | 0% | 70 | 17% |
| Canton/Dedham Street | | | | | | | | | | | | |
| 22 - n. of Blue Hill Drive | NB | 570 | 660 | 640 | 640 | 0% | 590 | -8% | 640 | 0% | 520 | -19% |
| | SB | 870 | 900 | 960 | 950 | -1% | 950 | -1% | 950 | -1% | 960 | 0% |
| 23 - n. of University Avenue | NB | 220 | 230 | 250 | 280 | 12% | 200 | -20% | 260 | 4% | 130 | -48% |
| | SB | 570 | 610 | 450 | 450 | 0% | 480 | 7% | 440 | -2% | 470 | 4% |
| 24 - s. of University Avenue | NB | 440 | 490 | 470 | 480 | 2% | 290 | -38% | 450 | -4% | 300 | -36% |
| | SB | 750 | 850 | 750 | 680 | -9% | 990 | 32% | 730 | -3% | 1040 | 39% |
| 25 - s. of Shawmut Road | NB | 250 | 290 | 300 | 290 | -3% | 350 | 17% | 270 | -10% | 410 | 37% |
| | SB | 1410 | 1530 | 1490 | 1400 | -6% | 1370 | -8% | 1460 | -2% | 1350 | -9% |
| 26 - n. of Washington Street | NB | 280 | 310 | 290 | 330 | 14% | 290 | 0% | 290 | 0% | 330 | 14% |
| | SB | 610 | 660 | 710 | 640 | -10% | 640 | -10% | 680 | -4% | 630 | -11% |
| Route 138 | | | | | | | | | | | | |
| 27 - n. of Royall Street | NB | 1000 | 1170 | 1180 | 1180 | 0% | 1180 | 0% | 1180 | 0% | 1180 | 0% |
| | SB | 1410 | 1520 | 1530 | 1530 | 0% | 1530 | 0% | 1300 | -15% | 1530 | 0% |
| 28 - s. of Royall Street | NB | 950 | 1070 | 1080 | 980 | -9% | 1380 | 28% | 1150 | 6% | 980 | -9% |
| | SB | 1790 | 2280 | 2230 | 1440 | -35% | 2710 | 22% | 1630 | -27% | 1410 | -37% |
| 29 - s. of Greenlodge Street | NB | 1330 | 1440 | 1430 | 1430 | 0% | 1560 | 9% | 1450 | 1% | 1610 | 13% |
| | SB | 1400 | 1580 | 1550 | 1630 | 5% | 1650 | 6% | 1520 | -2% | 1370 | -12% |
| 30 - s. of Randolph Street | NB | 990 | 1070 | 1080 | 1010 | -6% | 1080 | 0% | 1080 | 0% | 1080 | 0% |
| | SB | 780 | 870 | 870 | 870 | 0% | 870 | 0% | 870 | 0% | 870 | 0% |

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

(Robert Sievert, 971209, PM%ChWO.xls)

## (PM PEAK HOUR, WITHOUT the Greenlodge Street Bridge)

("PACKAGES" 2 a -- 2 d)

| LOCAL ROADWAYS (cont.) | | NO-BUILD | | | BUILD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITHOUT the Greenlodge Street Bridge | | | | | | | |
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 2 a | | "Package" 2 b | | "Package" 2 c | | "Package" 2 d | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Washington Street | | | | | | | | | | | | |
| 31 - s. of Route 138 | NB | 520 | 590 | 600 | 590 | -2% | 530 | -12% | 610 | 2% | 470 | -22% |
| | SB | 570 | 700 | 690 | 660 | -4% | 670 | -3% | 660 | -4% | 620 | -10% |
| 32 - n. of Dedham Street | NB | 1070 | 1080 | 1060 | 1010 | -5% | 1090 | 3% | 1050 | -1% | 1080 | 2% |
| (south of Pleasant Street) | SB | 810 | 920 | 930 | 890 | -4% | 1010 | 9% | 890 | -4% | 960 | 3% |
| 33 - s. of Sherman Street | NB | 580 | 620 | 620 | 570 | -8% | 610 | -2% | 620 | 0% | 600 | -3% |
| | SB | 780 | 890 | 870 | 840 | -3% | 850 | -2% | 850 | -2% | 800 | -8% |
| Royall Street | | | | | | | | | | | | |
| 34 - e. of Route 138 | EB | 250 | 430 | 390 | 360 | -8% | 600 | 54% | 390 | 0% | 400 | 3% |
| | WB | 350 | 430 | 410 | 410 | 0% | 800 | 95% | 470 | 15% | 420 | 2% |
| 35 - w. of Route 138 | EB | 500 | 1250 | 1160 | 340 | -71% | 1160 | 0% | 800 | -31% | 400 | -66% |
| | WB | 160 | 390 | 380 | 400 | 5% | 380 | 0% | 520 | 37% | 340 | -11% |
| Pleasant Street | | | | | | | | | | | | |
| 36 - s. of Washington Street | NB | 220 | 230 | 240 | 200 | -17% | 240 | 0% | 240 | 0% | 240 | 0% |
| | SB | 640 | 670 | 660 | 580 | -12% | 660 | 0% | 650 | -2% | 670 | 2% |
| 37 - s. of Sherman Street | NB | 340 | 430 | 420 | 440 | 5% | 440 | 5% | 370 | -12% | 470 | 12% |
| | SB | 770 | 870 | 860 | 770 | -10% | 860 | 0% | 850 | -1% | 860 | 0% |
| Neponset Street | | | | | | | | | | | | |
| 38 - e. of Chapman Street | EB | 1020 | 1020 | 1020 | 1050 | 3% | 1050 | 3% | 1060 | 4% | 1120 | 10% |
| | WB | 550 | 560 | 560 | 530 | -5% | 560 | 0% | 610 | 9% | 540 | -4% |
| 39 - w. of Chapman Street | EB | 1200 | 1210 | 1200 | 1240 | 3% | 1220 | 2% | 1240 | 3% | 1290 | 8% |
| | WB | 1040 | 1140 | 1200 | 1190 | -1% | 1150 | -4% | 1200 | 0% | 1120 | -7% |
| Greenlodge Street | | | | | | | | | | | | |
| 40 - w. of Route 138 | EB | 130 | 120 | 120 | 20 | -83% | 20 | -83% | 20 | -83% | 20 | -83% |
| | WB | 50 | 50 | 50 | 30 | -40% | 30 | -40% | 30 | -40% | 30 | -40% |

(Robert Sievert, 971209, PM%ChWO.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**UNIVERSITY AVENUE / I-95 / ROUTE 128 STATION STUDY**
**1995 and 2020 Volumes on Selected Roadways: No-Build and Various Build Scenarios**
**(PM PEAK HOUR, WITH the Greenlodge Street Bridge)**

("PACKAGES" 3 a -- 3 e)

| | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITH the Greenlodge Street Bridge | | | | | | | | | |
| | | 1995 | 2020 | 2020 | "Package" 3 a | | "Package" 3 b | | "Package" 3 c | | "Package" 3 d | | "Package" 3 e | |
| HIGHWAYS | | Balanced Counts | WITHOUT New Garage | WITH New Garage | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Route 128 (I-95/I-93) | | | | | | | | | | | | | | |
| 1 - n. of Route 1 | NB | 6130 | 7530 | 7680 | 7680 | 0% | 7680 | 0% | 7680 | 0% | 7680 | 0% | 7680 | 0% |
| | SB | 6470 | 7590 | 7630 | 7630 | 0% | 7630 | 0% | 7630 | 0% | 7630 | 0% | 7630 | 0% |
| 2 - n. of University Ave/ | NB | 5870 | 7100 | 7290 | 7290 | 0% | 7300 | 0% | 7260 | 0% | 7300 | 0% | 7350 | 1% |
| Blue Hill Drive | SB | 6640 | 7590 | 7600 | 7610 | 0% | 7610 | 0% | 7620 | 0% | 7780 | 2% | 7610 | 0% |
| 3 - n. of I-95 | NB | 5690 | 6620 | 6620 | 6610 | 0% | 6570 | -1% | 6530 | -1% | 6540 | -1% | 6470 | -2% |
| | SB | 7520 | 8690 | 9160 | 9080 | -1% | 8720 | -5% | 8840 | -3% | 8750 | -4% | 8810 | -4% |
| 4 - n. of Route 138 | NB | 7150 | 8170 | 8150 | 8160 | 0% | 8130 | 0% | 7590 | -7% | 8110 | 0% | 7410 | -9% |
| | SB | 7240 | 8100 | 8490 | 8400 | -1% | 8450 | 0% | 8370 | -1% | 8480 | 0% | 8470 | 0% |
| 5 - s. of Ponkapoag Trail | NB | 6520 | 7250 | 7260 | 7260 | 0% | 7260 | 0% | 7260 | 0% | 7260 | 0% | 7260 | 0% |
| | SB | 7820 | 8780 | 9110 | 9110 | 0% | 9110 | 0% | 9110 | 0% | 9110 | 0% | 9110 | 0% |
| I-95 | | | | | | | | | | | | | | |
| 6 - s. of Route 128 | NB | 2860 | 3350 | 3360 | 3360 | 0% | 3300 | -2% | 3270 | -3% | 3330 | -1% | 3550 | 6% |
| | SB | 4600 | 5480 | 5560 | 5590 | 1% | 5130 | -8% | 5660 | 2% | 5170 | -7% | 5380 | -3% |
| 7 - s. of Neponset Street | NB | 2620 | 3190 | 3200 | 3200 | 0% | 3200 | 0% | 3200 | 0% | 3200 | 0% | 3200 | 0% |
| | SB | 4670 | 5660 | 5810 | 5810 | 0% | 5810 | 0% | 5810 | 0% | 5810 | 0% | 5810 | 0% |
| Route 1 | | | | | | | | | | | | | | |
| 8 - n. of Route 128 | NB | 1740 | 1780 | 1810 | 1810 | 0% | 1810 | 0% | 1810 | 0% | 1810 | 0% | 1810 | 0% |
| | SB | 2440 | 2410 | 2450 | 2450 | 0% | 2450 | 0% | 2450 | 0% | 2450 | 0% | 2450 | 0% |
| 9 - s. of Route 128 | NB | 2200 | 2430 | 2440 | 2440 | 0% | 2430 | 0% | 2440 | 0% | 2430 | 0% | 2430 | 0% |
| | SB | 2430 | 2550 | 2620 | 2640 | 1% | 2610 | 0% | 2580 | -2% | 2610 | 0% | 2630 | 0% |
| 10 - s. of Everett Street | NB | 1610 | 1760 | 1750 | 1760 | 1% | 1710 | -2% | 1770 | 1% | 1760 | 1% | 1760 | 1% |
| | SB | 2510 | 2630 | 2650 | 2620 | -1% | 2520 | -5% | 2610 | -2% | 2600 | -2% | 2550 | -4% |
| 11 - s. of Dean Street | NB | 1590 | 1640 | 1640 | 1640 | 0% | 1640 | 0% | 1640 | 0% | 1640 | 0% | 1640 | 0% |
| | SB | 1970 | 2100 | 2080 | 2080 | 0% | 2070 | 0% | 2080 | 0% | 2090 | 0% | 2080 | 0% |

(Robert Sievert, 971209, PM%ChWI.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**(PM PEAK HOUR, WITH the Greenlodge Street Bridge)**

**("PACKAGES" 3 a -- 3 e)**

| RAMPS | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITH the Greenlodge Street Bridge | | | | | | | | | |
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 a | | "Package" 3 b | | "Package" 3 c | | "Package" 3 d | | "Package" 3 e | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| I-95 From/To Rt 128 (I-95/I-93) | | | | | | | | | | | | | | |
| 12 - I-95 NB to Route 128 NB | | 1230 | 1550 | 1560 | 1560 | 0% | 1520 | -3% | 1520 | -3% | 1530 | -2% | 1670 | 7% |
| - I-95 NB to Route 128 SB | | 1640 | 1800 | 1800 | 1800 | 0% | 1790 | -1% | 1760 | -2% | 1800 | 0% | 1890 | 5% |
| - Route 128 NB to I-95 SB | | 2690 | 3100 | 3100 | 3110 | 0% | 3080 | -1% | 2580 | -17% | 3100 | 0% | 2590 | -16% |
| - Route 128 SB to I-95 SB | | 1920 | 2390 | 2470 | 2480 | 0% | 2050 | -17% | 2230 | -10% | 2070 | -16% | 2230 | -10% |
| Rt 128 SB From/To Blue Hill Drive | | | | | | | | | | | | | | |
| 13 - On-Ramp (TO Rt 128 SB) | | 1040 | 1230 | 1740 | 1670 | -4% | 1300 | -25% | 1440 | -17% | 1160 | -33% | 1420 | -18% |
| - Off-Ramp (FROM Rt 128 SB) | | 80 | 120 | 190 | 200 | 5% | 180 | -5% | 220 | 16% | 190 | 0% | 220 | 16% |
| **LOCAL ROADWAYS** | | | | | | | | | | | | | | |
| University Avenue/Everett Street | | | | | | | | | | | | | | |
| 14 - n. of Rail Stn driveways | NB | 480 | 690 | 910 | 910 | 0% | 910 | 0% | 900 | -1% | 930 | 2% | 880 | -3% |
| | SB | 190 | 210 | 230 | 230 | 0% | 180 | -22% | 180 | -22% | 170 | -26% | 180 | -22% |
| 15 - s. of Rail Stn driveways | NB | 460 | 660 | 650 | 640 | -2% | 640 | -2% | 640 | -2% | 660 | 2% | 610 | -6% |
| | SB | 410 | 470 | 1110 | 1010 | -9% | 770 | -31% | 810 | -27% | 790 | -29% | 970 | -13% |
| 16 - s. of Blue Hill Drive | NB | 1130 | 1520 | 1450 | 1460 | 1% | 1500 | 3% | 1490 | 3% | 1490 | 3% | 1170 | -19% |
| | SB | 260 | 350 | 470 | 450 | -4% | 410 | -13% | 460 | -2% | 420 | -11% | 430 | -9% |
| 17 - s. of Canton/ | NB/EB | 350 | 350 | 360 | 360 | 0% | 370 | 3% | 360 | 0% | 370 | 3% | 360 | 0% |
| Dedham Street | SB/WB | 420 | 500 | 560 | 560 | 0% | 540 | -4% | 560 | 0% | 560 | 0% | 490 | -13% |
| 18 - e. of Route 1 | EB | 470 | 470 | 480 | 480 | 0% | 480 | 0% | 480 | 0% | 490 | 2% | 480 | 0% |
| | WB | 770 | 880 | 960 | 950 | -1% | 920 | -4% | 940 | -2% | 940 | -2% | 860 | -10% |
| 19 - w. of Route 1 | EB | 600 | 610 | 620 | 610 | -2% | 670 | 8% | 600 | -3% | 610 | -2% | 600 | -3% |
| | WB | 460 | 580 | 660 | 710 | 8% | 740 | 12% | 640 | -3% | 680 | 3% | 690 | 5% |

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

(Robert Sievert, 971209, PM%ChWi.xls)

## (PM PEAK HOUR, WITH the Greenlodge Street Bridge)

("PACKAGES" 3 a -- 3 e)

| LOCAL ROADWAYS (cont.) | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITH the Greenlodge Street Bridge | | | | | | | | | |
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 a | | "Package" 3 b | | "Package" 3 c | | "Package" 3 d | | "Package" 3 e | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Blue Hill Drive | | | | | | | | | | | | | | |
| 20 - e. of Route 128 SB ramps | EB | 120 | 170 | 210 | 220 | 5% | 200 | -5% | 230 | 10% | 190 | -10% | 230 | 10% |
| | WB | 940 | 1130 | 1650 | 1580 | -4% | 1210 | -27% | 1350 | -18% | 1160 | -30% | 1330 | -19% |
| 21 - w. of Route 128 SB ramp | EB | 200 | 210 | 180 | 180 | 0% | 180 | 0% | 180 | 0% | -- | -- | 170 | -6% |
| | WB | 70 | 70 | 60 | 70 | 17% | 80 | 33% | 70 | 17% | -- | -- | 60 | 0% |
| Canton/Dedham Street | | | | | | | | | | | | | | |
| 22 - n. of Blue Hill Drive | NB | 570 | 660 | 640 | 640 | 0% | 640 | 0% | 640 | 0% | 770 | 20% | 590 | -8% |
| | SB | 870 | 900 | 960 | 950 | -1% | 950 | -1% | 950 | -1% | 970 | 1% | 960 | 0% |
| 23 - n. of University Avenue | NB | 220 | 230 | 250 | 250 | 0% | 240 | -4% | 250 | 0% | 290 | 16% | 200 | -20% |
| | SB | 570 | 610 | 450 | 450 | 0% | 460 | 2% | 460 | 2% | 470 | 4% | 480 | 7% |
| 24 - s. of University Avenue | NB | 440 | 490 | 470 | 470 | 0% | 490 | 4% | 480 | 2% | 540 | 15% | 300 | -36% |
| | SB | 750 | 850 | 750 | 720 | -4% | 730 | -3% | 740 | -1% | 740 | -1% | 980 | 31% |
| 25 - s. of Shawmut Road | NB | 250 | 290 | 300 | 300 | 0% | 300 | 0% | 280 | -7% | 340 | 13% | 370 | 23% |
| | SB | 1410 | 1530 | 1490 | 1460 | -2% | 1440 | -3% | 1450 | -3% | 1450 | -3% | 1360 | -9% |
| 26 - n. of Washington Street | NB | 280 | 310 | 290 | 300 | 3% | 290 | 0% | 270 | -7% | 350 | 21% | 270 | -7% |
| | SB | 610 | 660 | 710 | 710 | 0% | 700 | -1% | 690 | -3% | 680 | -4% | 650 | -8% |
| Route 138 | | | | | | | | | | | | | | |
| 27 - n. of Royall Street | NB | 1000 | 1170 | 1180 | 1180 | 0% | 1180 | 0% | 1100 | -7% | 1180 | 0% | 1180 | 0% |
| | SB | 1410 | 1520 | 1530 | 1530 | 0% | 1530 | 0% | 1290 | -16% | 1530 | 0% | 1290 | -16% |
| 28 - s. of Royall Street | NB | 950 | 1070 | 1080 | 1080 | 0% | 980 | -9% | 930 | -14% | 1320 | 22% | 1110 | 3% |
| | SB | 1790 | 2280 | 2230 | 2230 | 0% | 1360 | -39% | 1730 | -22% | 2710 | 22% | 1590 | -29% |
| 29 - s. of Greenlodge Street | NB | 1330 | 1440 | 1430 | 1440 | 1% | 1460 | 2% | 1560 | 9% | 1610 | 13% | 1410 | -1% |
| | SB | 1400 | 1580 | 1550 | 1530 | -1% | 1620 | 5% | 1430 | -8% | 1530 | -1% | 1540 | -1% |
| 30 - s. of Randolph Street | NB | 990 | 1070 | 1080 | 1080 | 0% | 1000 | -7% | 1080 | 0% | 1080 | 0% | 1080 | 0% |
| | SB | 780 | 870 | 870 | 870 | 0% | 920 | 6% | 870 | 0% | 870 | 0% | 870 | 0% |

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

(Robert Sievert, 971209, PM%ChWi.xls)

**(PM PEAK HOUR, WITH the Greenlodge Street Bridge)**

**("PACKAGES" 3 a -- 3 e)**

| LOCAL ROADWAYS (cont.) | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITH the Greenlodge Street Bridge | | | | | | | | | |
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 a | | "Package" 3 b | | "Package" 3 c | | "Package" 3 d | | "Package" 3 e | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Washington Street | | | | | | | | | | | | | | |
| 31 - s. of Route 138 | NB | 520 | 590 | 600 | 600 | 0% | 570 | -5% | 590 | -2% | 550 | -8% | 530 | -12% |
| | SB | 570 | 700 | 690 | 660 | -4% | 610 | -12% | 690 | 0% | 640 | -7% | 660 | -4% |
| 32 - n. of Dedham Street | NB | 1070 | 1080 | 1060 | 1070 | 1% | 1020 | -4% | 1050 | -1% | 1080 | 2% | 1060 | 0% |
| (south of Pleasant Street) | SB | 810 | 920 | 930 | 920 | -1% | 830 | -11% | 900 | -3% | 980 | 5% | 930 | 0% |
| 33 - s. of Sherman Street | NB | 580 | 620 | 620 | 620 | 0% | 570 | -8% | 620 | 0% | 620 | 0% | 610 | -2% |
| | SB | 780 | 890 | 870 | 860 | -1% | 820 | -6% | 850 | -2% | 860 | -1% | 810 | -7% |
| Royall Street | | | | | | | | | | | | | | |
| 34 - e. of Route 138 | EB | 250 | 430 | 390 | 400 | 3% | 490 | 26% | 400 | 3% | 550 | 41% | 420 | 8% |
| | WB | 350 | 430 | 410 | 410 | 0% | 460 | 12% | 470 | 15% | 800 | 95% | 490 | 20% |
| 35 - w. of Route 138 | EB | 500 | 1250 | 1160 | 1160 | 0% | 400 | -66% | 990 | -15% | 1160 | 0% | 820 | -29% |
| | WB | 160 | 390 | 380 | 380 | 0% | 340 | -11% | 470 | 24% | 380 | 0% | 520 | 37% |
| Pleasant Street | | | | | | | | | | | | | | |
| 36 - s. of Washington Street | NB | 220 | 230 | 240 | 240 | 0% | 200 | -17% | 240 | 0% | 220 | -8% | 240 | 0% |
| | SB | 640 | 670 | 660 | 660 | 0% | 530 | -20% | 660 | 0% | 670 | 2% | 670 | 2% |
| 37 - s. of Sherman Street | NB | 340 | 430 | 420 | 370 | -12% | 390 | -7% | 360 | -14% | 420 | 0% | 380 | -10% |
| | SB | 770 | 870 | 860 | 860 | 0% | 720 | -16% | 860 | 0% | 860 | 0% | 860 | 0% |
| Neponset Street | | | | | | | | | | | | | | |
| 38 - e. of Chapman Street | EB | 1020 | 1020 | 1020 | 1050 | 3% | 1030 | 1% | 1030 | 1% | 1050 | 3% | 1050 | 3% |
| | WB | 550 | 560 | 560 | 610 | 9% | 590 | 5% | 620 | 11% | 560 | 0% | 610 | 9% |
| 39 - w. of Chapman Street | EB | 1200 | 1210 | 1200 | 1220 | 2% | 1200 | 0% | 1200 | 0% | 1230 | 3% | 1230 | 3% |
| | WB | 1040 | 1140 | 1200 | 1200 | 0% | 1140 | -5% | 1190 | -1% | 1190 | -1% | 1110 | -8% |
| Greenlodge Street | | | | | | | | | | | | | | |
| 40 - w. of Route 138 | EB | 130 | 120 | 120 | 100 | -17% | 60 | -50% | 20 | -83% | 20 | -83% | 70 | -42% |
| | WB | 50 | 50 | 50 | 30 | -40% | 50 | 0% | 40 | -20% | 30 | -40% | 30 | -40% |

(Robert Sievert, 971209, PM%ChWi.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

**UNIVERSITY AVENUE / I-95 / ROUTE 128 STATION STUDY**
**1995 and 2020 Volumes on Selected Roadways: No-Build and Various Build Scenarios**
**(PM PEAK HOUR, WITH the Greenlodge Street Bridge)**

("PACKAGES" 3 f -- 3 j)

| | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITH the Greenlodge Street Bridge | | | | | | | | | |
| | | 1995 Balanced | 2020 WITHOUT | 2020 WITH New | "Package" 3 f | | "Package" 3 g | | "Package" 3 h | | "Package" 3 I | | "Package" 3 j | |
| HIGHWAYS | | Counts | New Garage | Garage | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Route 128 (I-95/I-93) | | | | | | | | | | | | | | |
| 1 - n. of Route 1 | NB | 6130 | 7530 | 7680 | 7680 | 0% | 7680 | 0% | 7680 | 0% | 7680 | 0% | 7680 | 0% |
| | SB | 6470 | 7590 | 7630 | 7630 | 0% | 7630 | 0% | 7630 | 0% | 7630 | 0% | 7630 | 0% |
| 2 - n. of University Ave/ | NB | 5870 | 7100 | 7290 | 7290 | 0% | 7240 | -1% | 7300 | 0% | 7350 | 1% | 7330 | 1% |
| Blue Hill Drive | SB | 6640 | 7590 | 7600 | 7610 | 0% | 7500 | -1% | 7610 | 0% | 7620 | 0% | 8130 | 7% |
| 3 - n. of I-95 | NB | 5690 | 6620 | 6620 | 6610 | 0% | 6550 | -1% | 6570 | -1% | 6470 | -2% | 6570 | -1% |
| | SB | 7520 | 8690 | 9160 | 9200 | 0% | 8820 | -4% | 8720 | -5% | 8820 | -4% | 7990 | -13% |
| 4 - n. of Route 138 | NB | 7150 | 8170 | 8150 | 8120 | 0% | 8130 | 0% | 8130 | 0% | 7410 | -9% | 8150 | 0% |
| | SB | 7240 | 8100 | 8490 | 8420 | -1% | 8430 | -1% | 8450 | 0% | 8480 | 0% | 8450 | 0% |
| 5 - s. of Ponkapoag Trail | NB | 6520 | 7250 | 7260 | 7260 | 0% | 7260 | 0% | 7260 | 0% | 7260 | 0% | 7260 | 0% |
| | SB | 7820 | 8780 | 9110 | 9110 | 0% | 9110 | 0% | 9110 | 0% | 9110 | 0% | 9110 | 0% |
| I-95 | | | | | | | | | | | | | | |
| 6 - s. of Route 128 | NB | 2860 | 3350 | 3360 | 3360 | 0% | 3340 | -1% | 3300 | -2% | 3550 | 6% | 3310 | -1% |
| | SB | 4600 | 5480 | 5560 | 5650 | 2% | 5320 | -4% | 5130 | -8% | 5390 | -3% | 5150 | -7% |
| 7 - s. of Neponset Street | NB | 2620 | 3190 | 3200 | 3200 | 0% | 3200 | 0% | 3200 | 0% | 3200 | 0% | 3200 | 0% |
| | SB | 4670 | 5660 | 5810 | 5810 | 0% | 5810 | 0% | 5810 | 0% | 5810 | 0% | 5810 | 0% |
| Route 1 | | | | | | | | | | | | | | |
| 8 - n. of Route 128 | NB | 1740 | 1780 | 1810 | 1810 | 0% | 1810 | 0% | 1810 | 0% | 1810 | 0% | 1810 | 0% |
| | SB | 2440 | 2410 | 2450 | 2450 | 0% | 2450 | 0% | 2450 | 0% | 2450 | 0% | 2450 | 0% |
| 9 - s. of Route 128 | NB | 2200 | 2430 | 2440 | 2430 | 0% | 2430 | 0% | 2430 | 0% | 2430 | 0% | 2500 | 2% |
| | SB | 2430 | 2550 | 2620 | 2650 | 1% | 2660 | 2% | 2610 | 0% | 2630 | 0% | 2720 | 4% |
| 10 - s. of Everett Street | NB | 1610 | 1760 | 1750 | 1770 | 1% | 1780 | 2% | 1710 | -2% | 1760 | 1% | 1740 | -1% |
| | SB | 2510 | 2630 | 2650 | 2650 | 0% | 2550 | -4% | 2520 | -5% | 2550 | -4% | 2540 | -4% |
| 11 - s. of Dean Street | NB | 1590 | 1640 | 1640 | 1640 | 0% | 1640 | 0% | 1640 | 0% | 1640 | 0% | 1640 | 0% |
| | SB | 1970 | 2100 | 2080 | 2090 | 0% | 2090 | 0% | 2070 | 0% | 2080 | 0% | 2080 | 0% |

(Robert Sievert, 971210, PM%ChWi1.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

## (PM PEAK HOUR, WITH the Greenlodge Street Bridge)

("PACKAGES" 3 f -- 3 j)

| RAMPS | NO-BUILD | | | BUILD | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | WITH the Greenlodge Street Bridge | | | | | | | | |
| | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 f | | "Package" 3 g | | "Package" 3 h | | "Package" 3 i | | "Package" 3 j | |
| | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| I-95 From/To Rt 128 (I-95/I-93) | | | | | | | | | | | | | |
| 12 - I-95 NB to Route 128 NB | 1230 | 1550 | 1560 | 1560 | 0% | 1550 | -1% | 1520 | -3% | 1670 | 7% | 1520 | -3% |
| - I-95 NB to Route 128 SB | 1640 | 1800 | 1800 | 1800 | 0% | 1790 | -1% | 1790 | -1% | 1890 | 5% | 1790 | -1% |
| - Route 128 NB to I-95 SB | 2690 | 3100 | 3100 | 3070 | -1% | 3130 | 1% | 3080 | -1% | 2590 | -16% | 3090 | 0% |
| - Route 128 SB to I-95 SB | 1920 | 2390 | 2470 | 2580 | 4% | 2190 | -11% | 2050 | -17% | 2230 | -10% | 2060 | -17% |
| Rt 128 SB From/To Blue Hill Drive | | | | | | | | | | | | | |
| 13 - On-Ramp (TO Rt 128 SB) | 1040 | 1230 | 1740 | 1720 | -1% | 1500 | -14% | 1300 | -25% | 1420 | -18% | -- | -- |
| - Off-Ramp (FROM Rt 128 SB) | 80 | 120 | 190 | 120 | -37% | 180 | -5% | 180 | -5% | 210 | 11% | 140 | -26% |
| **LOCAL ROADWAYS** | | | | | | | | | | | | | |
| University Avenue/Everett Street | | | | | | | | | | | | | |
| 14 - n. of Rail Stn driveways NB | 480 | 690 | 910 | 910 | 0% | 910 | 0% | 910 | 0% | 880 | -3% | 930 | 2% |
| SB | 190 | 210 | 230 | 230 | 0% | 220 | -4% | 180 | -22% | 180 | -22% | 180 | -22% |
| 15 - s. of Rail Stn driveways NB | 460 | 660 | 650 | 650 | 0% | 640 | -2% | 640 | -2% | 610 | -6% | 660 | 2% |
| SB | 410 | 470 | 1110 | 990 | -11% | 760 | -32% | 770 | -31% | 970 | -13% | 400 | -64% |
| 16 - s. of Blue Hill Drive NB | 1130 | 1520 | 1450 | 1470 | 1% | 1490 | 3% | 1500 | 3% | 1170 | -19% | 1230 | -15% |
| SB | 260 | 350 | 470 | 370 | -21% | 390 | -17% | 410 | -13% | 430 | -9% | 420 | -11% |
| 17 - s. of Canton/ NB/EB | 350 | 350 | 360 | 370 | 3% | 380 | 6% | 370 | 3% | 360 | 0% | 300 | -17% |
| Dedham Street SB/WB | 420 | 500 | 560 | 550 | -2% | 540 | -4% | 540 | -4% | 490 | -13% | 550 | -2% |
| 18 - e. of Route 1 EB | 470 | 470 | 480 | 480 | 0% | 480 | 0% | 480 | 0% | 480 | 0% | 470 | -2% |
| WB | 770 | 880 | 960 | 920 | -4% | 930 | -3% | 920 | -4% | 860 | -10% | 1030 | 7% |
| 19 - w. of Route 1 EB | 600 | 610 | 620 | 580 | -6% | 610 | -2% | 670 | 8% | 600 | -3% | 650 | 5% |
| WB | 460 | 580 | 660 | 650 | -2% | 790 | 20% | 740 | 12% | 690 | 5% | 910 | 38% |

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

(Robert Sievert, 971210, PM%ChWi1.xls)

## (PM PEAK HOUR, WITH the Greenlodge Street Bridge)

("PACKAGES" 3 f -- 3 j)

| LOCAL ROADWAYS (cont.) | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITH the Greenlodge Street Bridge | | | | | | | | | |
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 f | | "Package" 3 g | | "Package" 3 h | | "Package" 3 i | | "Package" 3 j | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Blue Hill Drive | | | | | | | | | | | | | | |
| 20 - e. of Route 128 SB ramps | EB | 120 | 170 | 210 | 140 | -33% | 200 | -5% | 200 | -5% | 230 | 10% | 160 | -24% |
| | WB | 940 | 1130 | 1650 | 1590 | -4% | 1410 | -15% | 1210 | -27% | 1330 | -19% | 310 | -81% |
| 21 - w. of Route 128 SB ramp | EB | 200 | 210 | 180 | 180 | 0% | 180 | 0% | 180 | 0% | 170 | -6% | 20 | -89% |
| | WB | 70 | 70 | 60 | 40 | -33% | 70 | 17% | 80 | 33% | 60 | 0% | 310 | 417% |
| Canton/Dedham Street | | | | | | | | | | | | | | |
| 22 - n. of Blue Hill Drive | NB | 570 | 660 | 640 | 640 | 0% | 640 | 0% | 640 | 0% | 590 | -8% | 1050 | 64% |
| | SB | 870 | 900 | 960 | 950 | -1% | 950 | -1% | 950 | -1% | 950 | -1% | 960 | 0% |
| 23 - n. of University Avenue | NB | 220 | 230 | 250 | 280 | 12% | 250 | 0% | 240 | -4% | 200 | -20% | 270 | 8% |
| | SB | 570 | 610 | 450 | 460 | 2% | 450 | 0% | 460 | 2% | 480 | 7% | 410 | -9% |
| 24 - s. of University Avenue | NB | 440 | 490 | 470 | 480 | 2% | 510 | 9% | 490 | 4% | 300 | -36% | 390 | -17% |
| | SB | 750 | 850 | 750 | 650 | -13% | 720 | -4% | 730 | -3% | 970 | 29% | 750 | 0% |
| 25 - s. of Shawmut Road | NB | 250 | 290 | 300 | 290 | -3% | 320 | 7% | 300 | 0% | 370 | 23% | 260 | -13% |
| | SB | 1410 | 1530 | 1490 | 1370 | -8% | 1450 | -3% | 1440 | -3% | 1350 | -9% | 1530 | 3% |
| 26 - n. of Washington Street | NB | 280 | 310 | 290 | 320 | 10% | 320 | 10% | 290 | 0% | 270 | -7% | 300 | 3% |
| | SB | 610 | 660 | 710 | 640 | -10% | 710 | 0% | 700 | -1% | 640 | -10% | 720 | 1% |
| Route 138 | | | | | | | | | | | | | | |
| 27 - n. of Royall Street | NB | 1000 | 1170 | 1180 | 1180 | 0% | 1180 | 0% | 1180 | 0% | 1180 | 0% | 1180 | 0% |
| | SB | 1410 | 1520 | 1530 | 1530 | 0% | 1530 | 0% | 1530 | 0% | 1290 | -16% | 1530 | 0% |
| 28 - s. of Royall Street | NB | 950 | 1070 | 1080 | 980 | -9% | 980 | -9% | 980 | -9% | 1110 | 3% | 980 | -9% |
| | SB | 1790 | 2280 | 2230 | 1440 | -35% | 1360 | -39% | 1360 | -39% | 1590 | -29% | 1410 | -37% |
| 29 - s. of Greenlodge Street | NB | 1330 | 1440 | 1430 | 1430 | 0% | 1440 | 1% | 1460 | 2% | 1410 | -1% | 1480 | 3% |
| | SB | 1400 | 1580 | 1550 | 1650 | 6% | 1620 | 5% | 1620 | 5% | 1540 | -1% | 1610 | 4% |
| 30 - s. of Randolph Street | NB | 990 | 1070 | 1080 | 1010 | -6% | 1010 | -6% | 1000 | -7% | 1080 | 0% | 1010 | -6% |
| | SB | 780 | 870 | 870 | 870 | 0% | 930 | 7% | 920 | 6% | 870 | 0% | 940 | 8% |

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

(Robert Sievert, 971210, PM%ChWi1.xls)

**(PM PEAK HOUR, WITH the Greenlodge Street Bridge)**

**("PACKAGES" 3 f -- 3 j)**

| LOCAL ROADWAYS (cont.) | | NO-BUILD | | | BUILD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | WITH the Greenlodge Street Bridge | | | | | | | | | |
| | | 1995 Balanced Counts | 2020 WITHOUT New Garage | 2020 WITH New Garage | "Package" 3 f | | "Package" 3 g | | "Package" 3 h | | "Package" 3 i | | "Package" 3 j | |
| | | | | | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. | Volume | % Ch. |
| Washington Street | | | | | | | | | | | | | | |
| 31 - s. of Route 138 | NB | 520 | 590 | 600 | 590 | -2% | 580 | -3% | 570 | -5% | 530 | -12% | 620 | 3% |
| | SB | 570 | 700 | 690 | 660 | -4% | 590 | -14% | 610 | -12% | 660 | -4% | 610 | -12% |
| 32 - n. of Dedham Street | NB | 1070 | 1080 | 1060 | 1000 | -6% | 1030 | -3% | 1020 | -4% | 1060 | 0% | 1050 | -1% |
| (south of Pleasant Street) | SB | 810 | 920 | 930 | 890 | -4% | 870 | -6% | 830 | -11% | 930 | 0% | 860 | -8% |
| 33 - s. of Sherman Street | NB | 580 | 620 | 620 | 570 | -8% | 570 | -8% | 570 | -8% | 610 | -2% | 570 | -8% |
| | SB | 780 | 890 | 870 | 840 | -3% | 820 | -6% | 820 | -6% | 810 | -7% | 830 | -5% |
| Royall Street | | | | | | | | | | | | | | |
| 34 - e. of Route 138 | EB | 250 | 430 | 390 | 370 | -5% | 460 | 18% | 490 | 26% | 420 | 8% | 470 | 21% |
| | WB | 350 | 430 | 410 | 410 | 0% | 430 | 5% | 460 | 12% | 490 | 20% | 480 | 17% |
| 35 - w. of Route 138 | EB | 500 | 1250 | 1160 | 410 | -65% | 400 | -66% | 400 | -66% | 820 | -29% | 400 | -66% |
| | WB | 160 | 390 | 380 | 340 | -11% | 340 | -11% | 340 | -11% | 520 | 37% | 340 | -11% |
| Pleasant Street | | | | | | | | | | | | | | |
| 36 - s. of Washington Street | NB | 220 | 230 | 240 | 190 | -21% | 200 | -17% | 200 | -17% | 240 | 0% | 200 | -17% |
| | SB | 640 | 670 | 660 | 580 | -12% | 540 | -18% | 530 | -20% | 670 | 2% | 540 | -18% |
| 37 - s. of Sherman Street | NB | 340 | 430 | 420 | 440 | 5% | 380 | -10% | 390 | -7% | 380 | -10% | 370 | -12% |
| | SB | 770 | 870 | 860 | 770 | -10% | 720 | -16% | 720 | -16% | 860 | 0% | 740 | -14% |
| Neponset Street | | | | | | | | | | | | | | |
| 38 - e. of Chapman Street | EB | 1020 | 1020 | 1020 | 1050 | 3% | 1020 | 0% | 1030 | 1% | 1060 | 4% | 1010 | -1% |
| | WB | 550 | 560 | 560 | 530 | -5% | 590 | 5% | 590 | 5% | 610 | 9% | 590 | 5% |
| 39 - w. of Chapman Street | EB | 1200 | 1210 | 1200 | 1240 | 3% | 1190 | -1% | 1200 | 0% | 1240 | 3% | 1190 | -1% |
| | WB | 1040 | 1140 | 1200 | 1190 | -1% | 1150 | -4% | 1140 | -5% | 1110 | -8% | 1190 | -1% |
| Greenlodge Street | | | | | | | | | | | | | | |
| 40 - w. of Route 138 | EB | 130 | 120 | 120 | 100 | -17% | 80 | -33% | 60 | -50% | 70 | -42% | 30 | -75% |
| | WB | 50 | 50 | 50 | 30 | -40% | 40 | -20% | 50 | 0% | 30 | -40% | 40 | -20% |

(Robert Sievert, 971210, PM%ChWi1.xls)

NOTE: % Ch. = percent change from 2020 WITH New Garage volumes

# [APPENDIX B-5]

## MEMORANDUM

**TO:** University Avenue / I-95 / Route 128 Regional Traffic Study Task Force

**10 March, 1998**

**FROM:** Robert Sievert and Efi Pagitsas

**RE:** Description of Traffic Impacts of Individual Roadway Improvement Elements

The attached pages are descriptions of traffic impacts and changes in travel patterns due to various proposed roadway improvement elements, as modelled by the CTPS traffic simulation model. These verbal descriptions, together with the distributed CTPS memoranda on the elements' forecasted 2020 AM and PM peak hour volumes[1], provide a more complete summary of the expected traffic impacts of the proposed improvement elements.

The list of elements presented have been rearranged to fit into various groups. These groups were established to help in the evaluation and ranking of elements according to function.

RES/EP/res

[1]See Robert Sievert and Efi Pagitsas: "1995 AM Peak Hour Counts and 2020 No-Build and Build AM Peak Hour Volumes (DRAFT)," 2 December, 1997; and, "1995 PM Peak Hour Counts and 2020 No-Build and Build PM Peak Hour Volumes (DRAFT)," 10 December, 1997.

## ELEMENTS of ROADWAY IMPROVEMENTS:

17. PONKAPOAG @ ROUTE 128 (I-93) INTERCHANGE: Close interchange
(Included in "Packages" 2b, 3d)

21. ELIMINATING EAST-WEST THROUGH TRAFFIC ON CANTON STREET/DEDHAM STREET AT UNIVERSITY AVENUE
(Included in "Package" 3i)

3. ROUTE 1 @ ÉVERETT STREET: Single Point Urban Interchange
(Included in "Packages" 2a, 2c, 3f)

4. EAST-WEST ROAD: New connector between Pleasant Street and Dan Road (Rt. 138)
(Included in "Packages" 2a, 3b, 3f, 3g, 3h, 3j)

6 a and b. ROUTE 138 @ GREENLODGE STREET: Roadway widening, signal
(Included in "Packages" 2b, 2d, 3c)

18. ROUTE 138 @ RANDOLPH STREET: Expanding approaches at intersection
(Included in "Package" 2d)

2. ROUTE 138 @ ROYALL STREET: Intersection Improvements
(Included in "Packages" 2a, 2d, 3b, 3f, 3g, 3h, 3j)

8 a, b, and c. ROYALL STREET / I-95 RAMPS: TO I-95 SB; TO I-95 (128) NB; FROM I-95 NB (Included in "Packages" 2c, 3c, 3e, 3i)

12. "UNUSED BRIDGE" OVER ROUTE 128: Connecting Greenlodge St.with Royall St. and I-9 SB
(Included in "Package" 3c)

5 a, b, c, and d. I-95 @ DEDHAM STREET: On-Ramps, Off-Ramps, local street widening
(Included in "Packages" 2b, 2d, 3e, 3i)

11. GREENLODGE STREET / I-95 SLIP RAMPS: Northbound OFF, Southbound ON
(Included in "Packages" 3b, 3c, 3d, 3g, 3h, 3j)

1. I-95 (128) SB, NORTH OF I-95: $5^{th}$ lane on mainline; $2^{nd}$ lane on I-95 SB Off-Ramp
(Included in: "Packages": 2a, 3f)

15. RAMP BETWEEN I-95 NB and ROUTE 128 (I-95) NB ("Dead Man's Curve):Rebuilt structu
(Included in "Package" 3d)

9. I-95/I-93 ROUTE 128 INTERCHANGE : Complete rebuilding (similar to Rt. 24)
(Included in "Package" 2d)

7. NEPONSET STREET BETWEEN I-95 and ROUTE 1: Roadway widening
(Included in "Package" 2c)

10. GREENLODGE STREET BRIDGE: Rebuilt over rail line
(Included in "Packages" 3a, 3b, 3c, 3d, 3e, 3f, 3g, 3h, 3i, 3j)

19. ENDING GREENLODGE STREET (WEST OF BRIDGE) AT STATION
(Included in "Package" 3g)

20. ELIMINATING EAST-WEST THROUGH TRAFFIC ON BLUE HILL DRIVE/GREENLODGE STREET AT UNIVERSITY AVENUE
(Included in "Package" 3h)

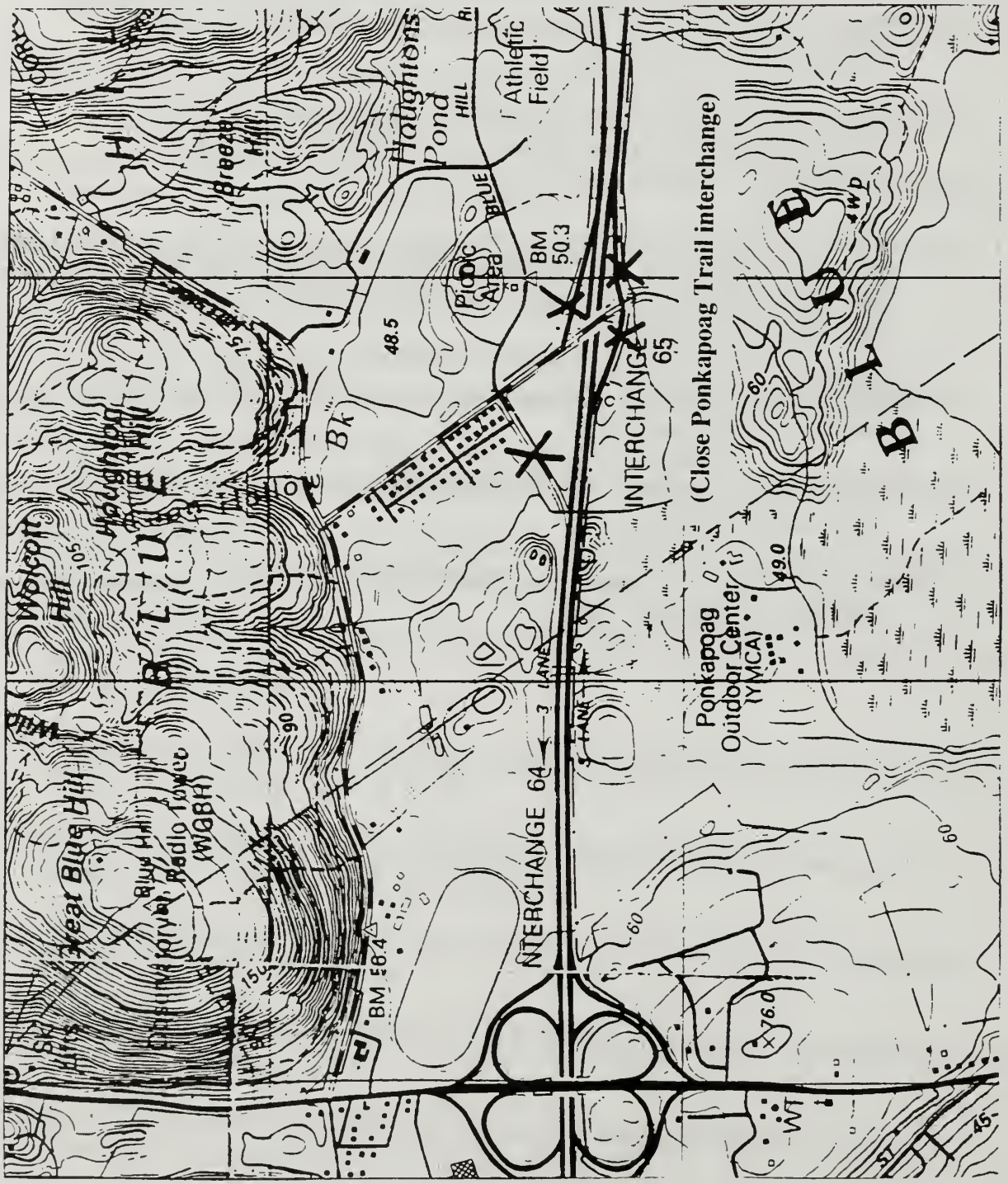
22. CLOSE ON-RAMP FROM BLUE HILL DRIVE TO ROUTE 128 SB ON-RAMP / ADD AN I-93 NB (ROUTE 128 SB) ON-RAMP FROM GREENLODGE STREET / ADD AN I-95 SB ON-RAMP FROM GREENLODGE STREET (ALT. DEDHAM STREET)
(Included in "Package" 3j

13. GREENLODGE STREET: One-way WB between Elm Street and new I-95 slip ramp area
(Included in "Package" 3c)

14. GREENLODGE STREET: Closed between Elm Street and new I-95 slip ramp area
(Included in "Package" 3d)

16. BLUE HILL DRIVE: Closed west of Route 128 SB ramps (i.e., creation of a cul-de-sac)
(Included in "Package" 3d)

## 17. PONKAPOAG @ ROUTE 128 (I-93) INTERCHANGE: Close interchange (Included in "Packages" 2b, 3d)



**17. PONKAPOAG @ ROUTE 128 (I-93) INTERCHANGE: Close Interchange**
**(included in "Packages" 2b and 3d)**

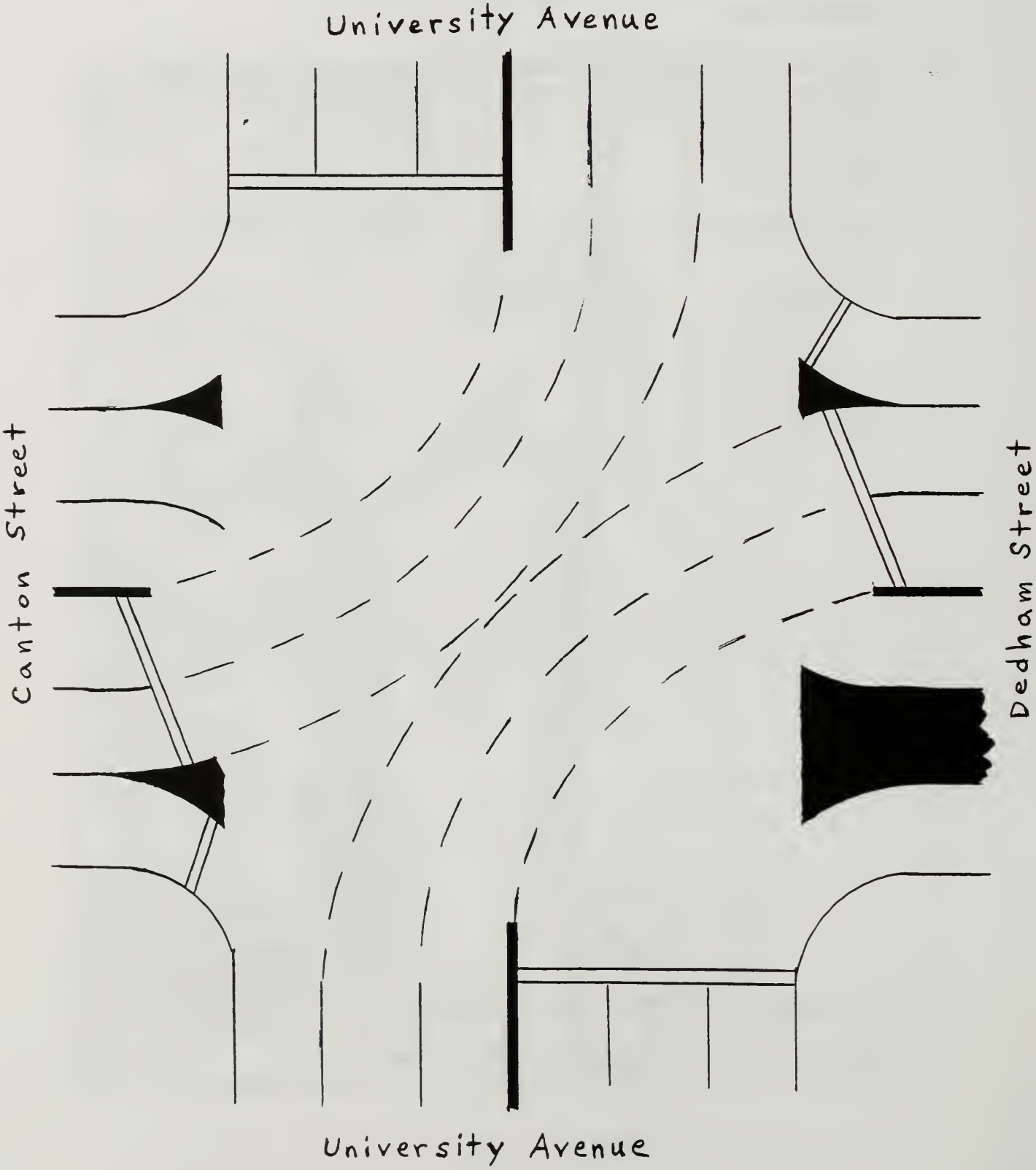
**AM Peak Hour**

The effect of this closure is the diversion of traffic from/to Route 128 to the Route 138 interchange. The resulting traffic increases northbound are 5 and 30 percent along Route 128 and Route 138, respectively.

**PM Peak Hour**

The effect of this element is traffic increases in the Route 138/Royall Street/Route 128 area.

## 21. ELIMINATING EAST-WEST THROUGH TRAFFIC ON CANTON STREET/DEDHAM STREET AT UNIVERSITY AVENUE
**(included in "Package" 3i)**

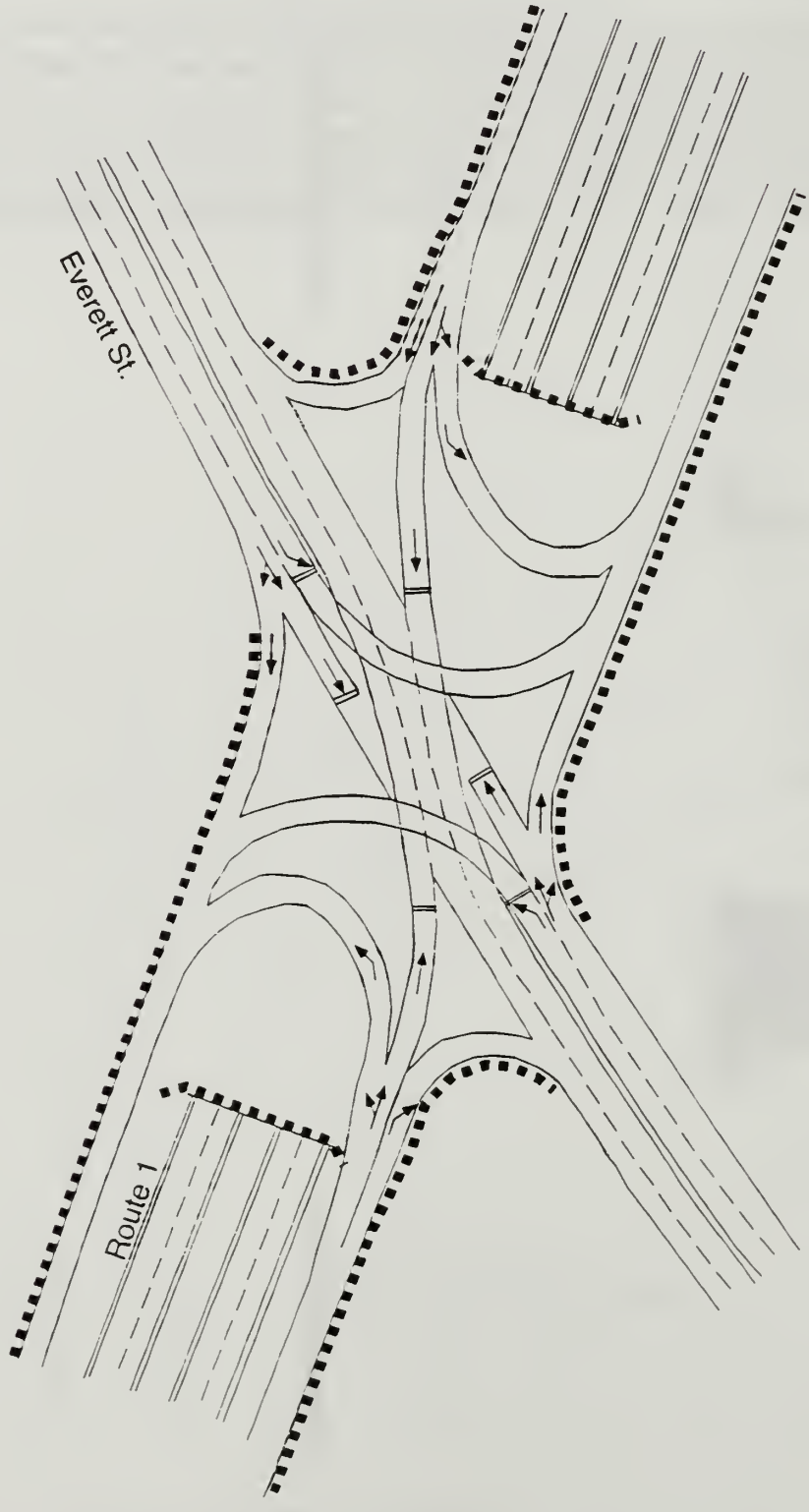


## 21. ELIMINATING EAST-WEST THROUGH TRAFFIC ON CANTON STREET/DEDHAM STREET AT UNIVERSITY AVENUE (included in "Package" 3i)

### AM and PM Peak Hour

In the 2020 base scenario, there were about 150 southbound and 480 northbound through vehicles in the AM peak hour and 330 southbound and 180 northbound through vehicles in the PM on Canton Street/Dedham Street at University Avenue. When this through movement is eliminated, the diverted traffic to a great extent still passes through this intersection but now as left turns or right turns from University Avenue to Dedham Street, and vice versa. Canton Street north of the intersection is a clear beneficiary.

## 3. ROUTE 1 @ EVERETT STREET: Single Point Urban Interchange
## (Included in "Packages" 2a, 2c, 3f)



## 3. ROUTE 1 @ EVERETT STREET: Single Point Urban Interchange
**(included in "Packages" 2a, 2c, 3f)**

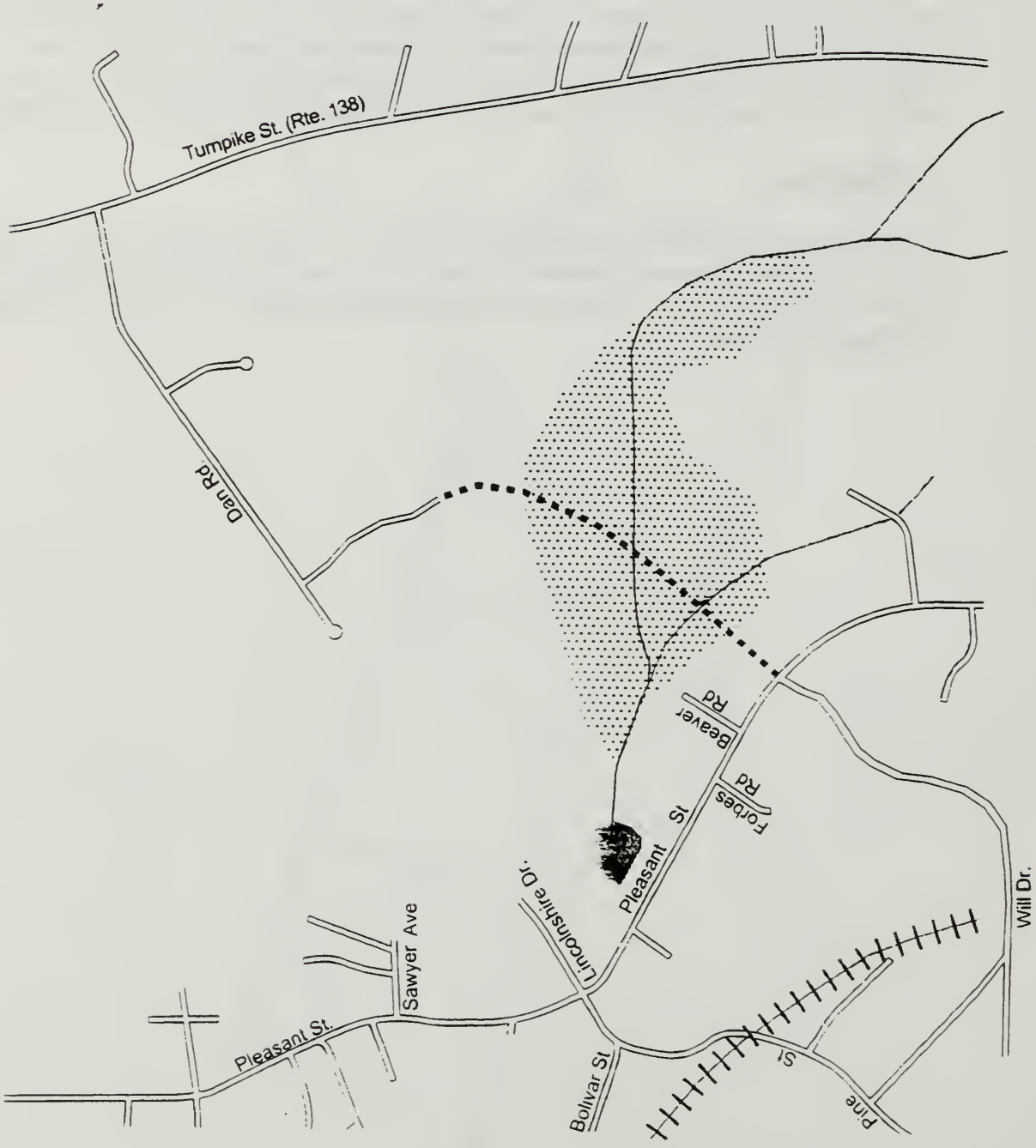
### AM Peak Hour

The effect of this improvement is rather limited in the immediate area to the south and west of Route 1. The grade separation tends to draw more traffic on Route 1, mainly from the area to its west (Route 1A). From the analysis of the model runs, no apparent interaction between this improvement and the improvement elements to the east was revealed with the exception of the widening along Neponset Street in package 2c. In that case some increase in the traffic exchange between Route I-95 and Route 1 was observed.

### PM Peak Hour

Slight diversion northbound onto Route 1 from Route 1A, south of Everett Street. Also, Route 128 northbound traffic destined for Route 1A is now expected to stay longer on the highway and take Route 1 southbound instead of cutting through East Street at the Route 128/East Street Rotary.

## 4. EAST-WEST ROAD: New connector between Pleasant Street and Dan Road (Rt. 138)
## (Included in "Packages" 2a, 3b, 3f, 3g, 3h, 3j)



**4. EAST-WEST ROAD: New connector between Pleasant Street and Dan Road to/from (Rt. 138)**
**(included in "Packages" 2a, 3b, 3f, 3g, 3h, 3j)**

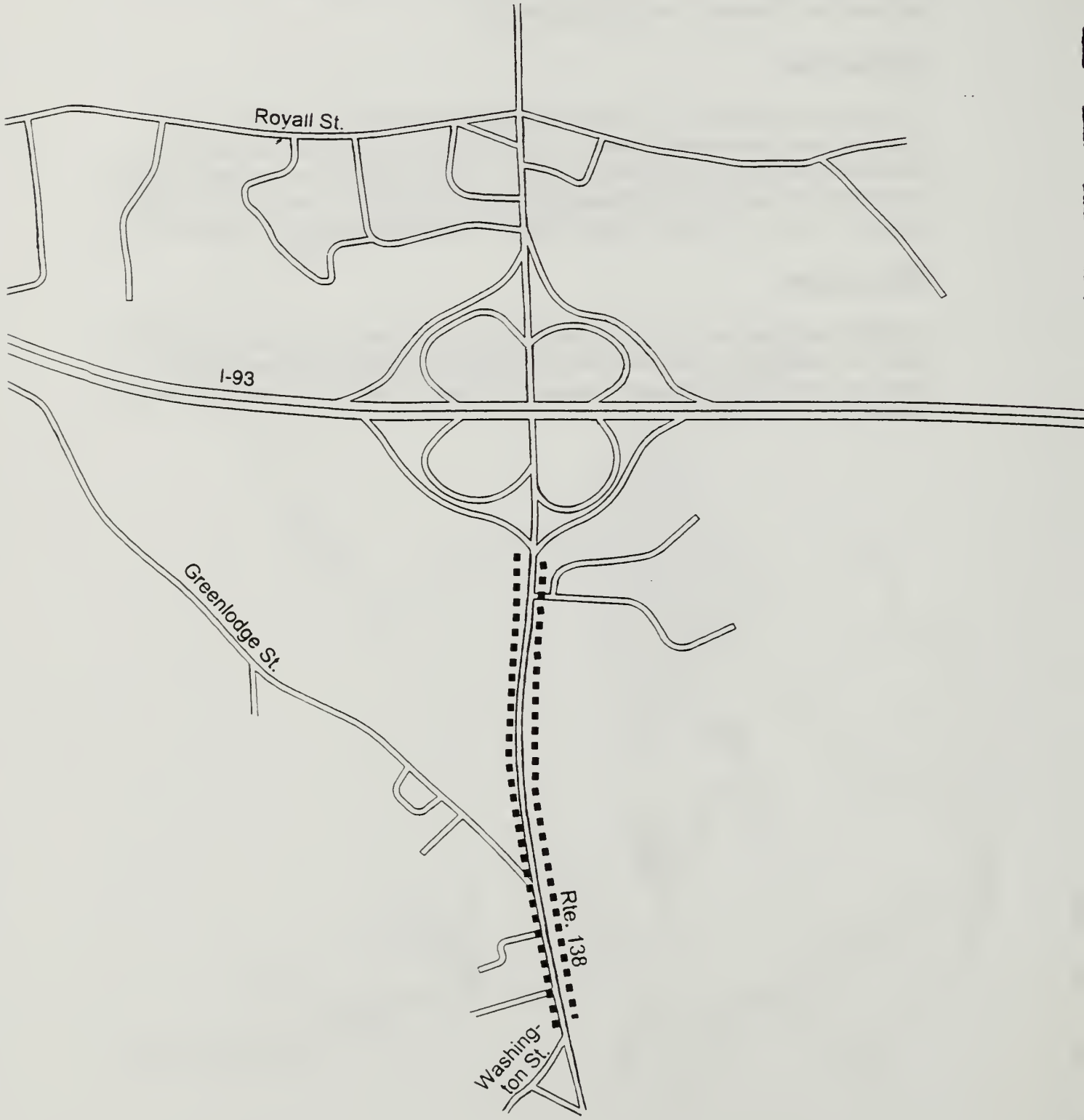
**AM Peak Hour**

The connector is beneficial to Chapman, Washington and Pleasant Streets north of Sherman Street in mid-south Canton. It reduces circuitous travel for those wishing to reach Route 138 from the south and southwest. Traffic reductions are expected mostly in the northbound direction along Pleasant and Washington Streets; both directions along Randolph Street west of Route 138 and; Route 138 southbound south of Randolph Street.

**PM Peak Hour**

The same traffic patterns as in the AM Peak Hour but generally in the opposite direction. Route 138 northbound traffic uses the new connector to reach Bolivar and Sherman Streets in lower Canton. Presently, that area of Canton is reached via Randolph Street to the north.

## 6. ROUTE 138 @ GREENLODGE STREET: Roadway widening, signal
**(Included in "Packages" 2b, 2d, 3c)**



**6. ROUTE 138 @ GREENLODGE STREET: Roadway widening, traffic signal (included in "Packages" 2b, 2d, 3c)**

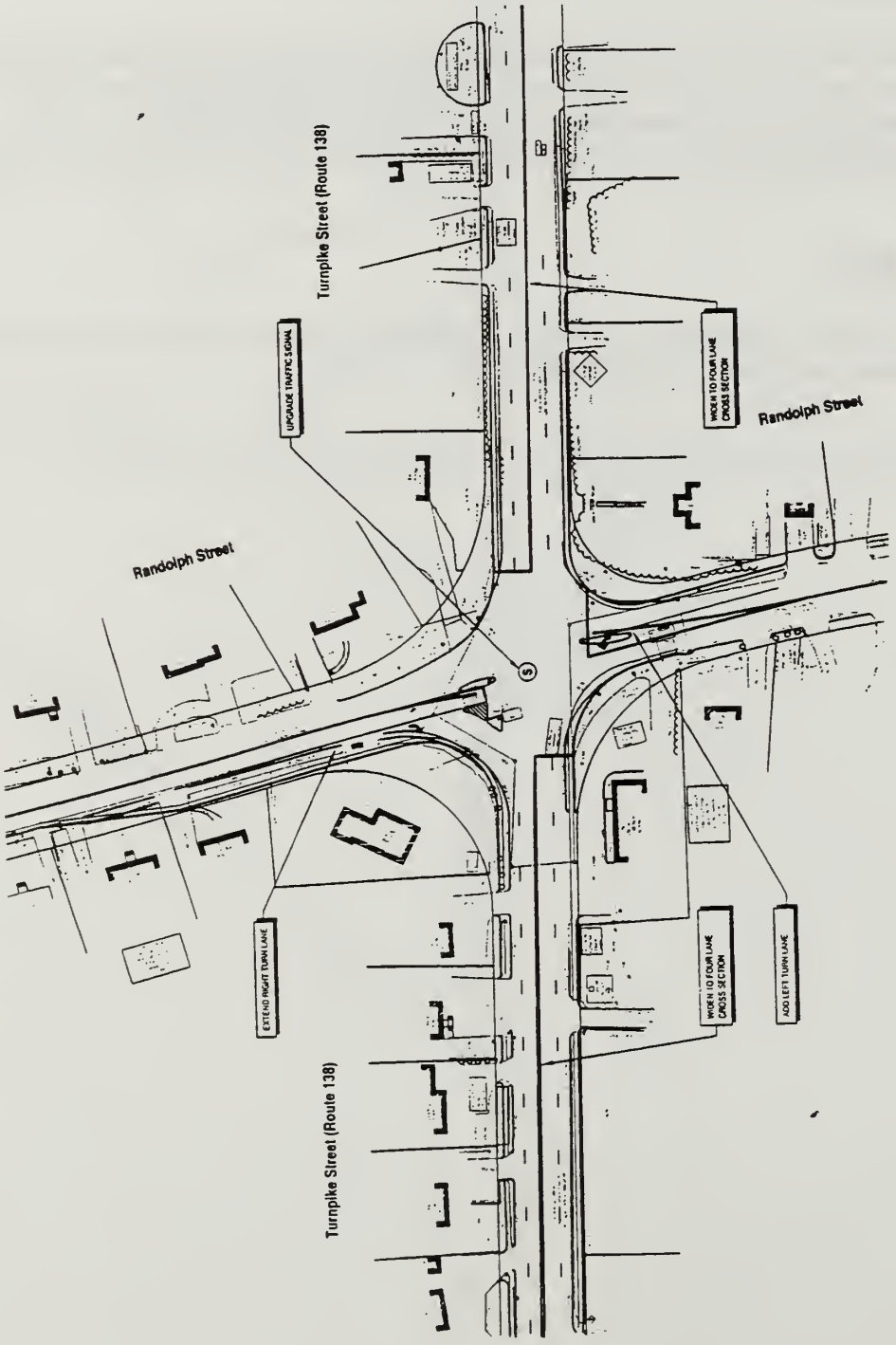
**AM Peak Hour**

From the model runs, this improvement element does not appear to have a major effect on Greenlodge Street or Route 138. The eastbound traffic reductions along Greenlodge Street in packages 2b and 2d are due to the effect of the Dedham Street ramps. The traffic changes along Route 138 in the vicinity of Greenlodge Street are rather small and random.

**PM Peak Hour**

As in the AM, this improvement will have rather local operational traffic improvement effects and no significant traffic diversion effects.

## 18. ROUTE 138 @ RANDOLPH STREET: Expanding approaches at intersection (Included in "Package" 2d)




(Source: Reebok DEIR. 02/98)

**18. ROUTE 138 @RANDOLPH STREET: Expanding approaches at intersection (included in "Package" 2d)**

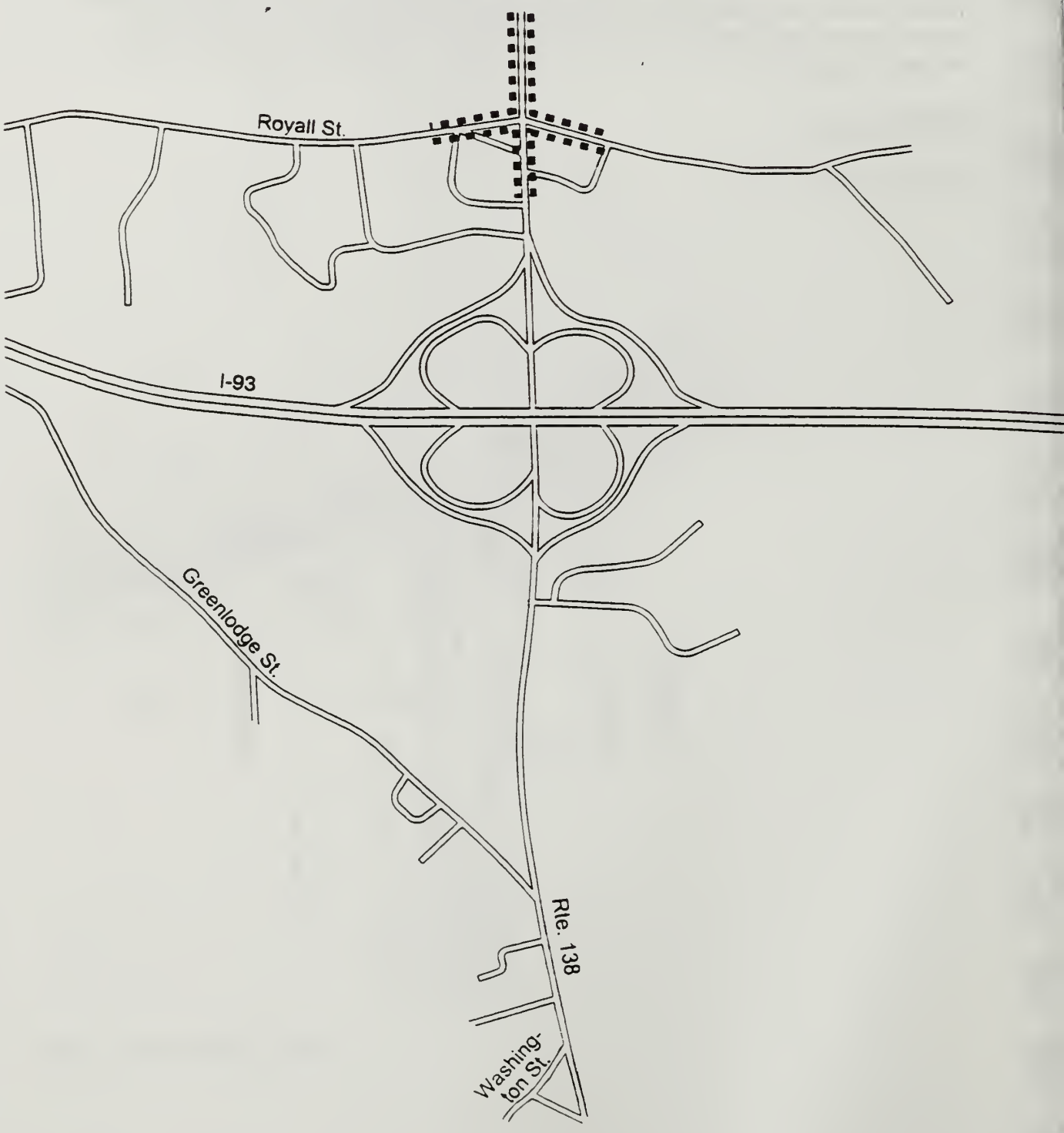
**AM Peak Hour**

From this level of analysis, it is not possible to determine if this element has the power to cause traffic diversions on its own. There are other elements present in Package 2d which have potentially the same effect. However, expanding the approaches at this location is expected to have an impact on the traffic operations at this location resulting in lower delays and queues.

**PM Peak Hour**

Traffic operations benefit.

## 2. ROUTE 138 @ ROYALL STREET: Intersection Improvements
**(Included in "Packages" 2a, 2d, 3b, 3f, 3g, 3h, 3j)**



## 2. ROUTE 138 @ ROYALL STREET: Intersection Improvements
**(included in "Packages" 2a, 2d, 3b, 3f, 3g, 3h, 3j)**

### AM Peak Hour

The opening of the median at Route 138 and the new traffic light at the Instron Driveway will cause Route 138 northbound traffic now using the Route 138/Royall Street intersection to divert to this location instead. Traffic reductions are expected northbound along Route 138 south of Royall Street and in both directions along Royal Street west of Route 138.

### PM Peak Hour

Traffic pattern changes from the No Build as in the AM Peak Hour but in the reverse PM Peak Hour direction.

## 8. ROYALL STREET / I-95 RAMPS: TO I-95 SB; TO I-95 (128) NB; FROM I-95 NB

**(Included in "Packages" 2c, 3c, 3e, 3i)**

## 8. ROYALL STREET/I-95 RAMPS: TO I-95 SB; TO I-95 (128) NB; FROM I-95 NB

**(included in "Packages" 2c, 3c, 3e, 3i)**

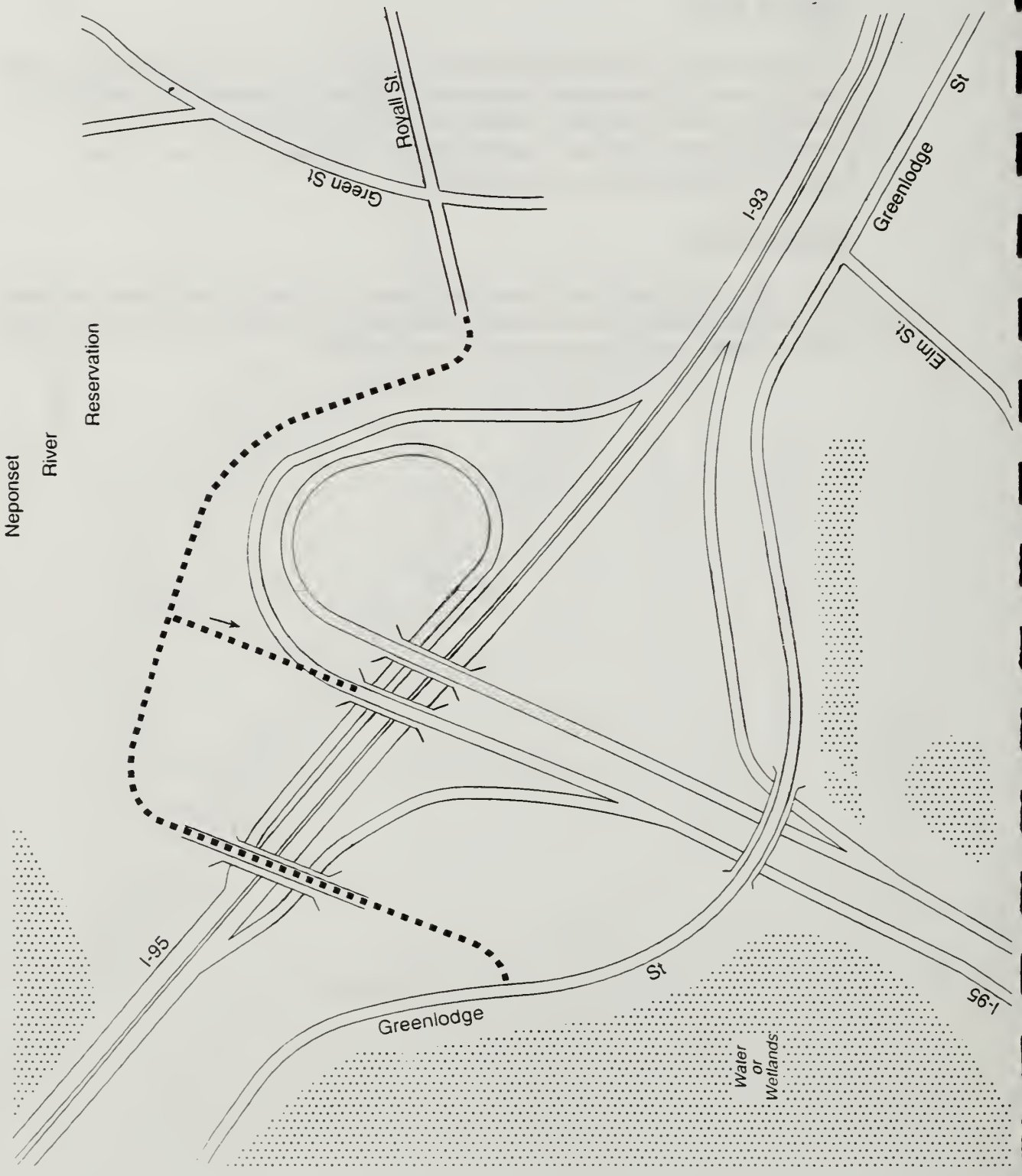
### AM Peak Hour

The effect of these potential connections is to allow for direct travel from/to Route I-95 north and south. Consequently, the segment of Route 128 between I-95 and Route 138 benefits from traffic reductions. Reductions are in the order of 100-200 vehicles, depending on the specific new roadway segment/ramp and the presence of other improvement elements in the various packages.

### PM Peak Hour

These connections shift Royall Street traffic bound for Route 128 northbound and Route I-95 southbound away from the Route 138 interchange with Route 128 to the new ramps. Diverted traffic ranges from about 200 to 600 vehicles.

## 12. "UNUSED BRIDGE" OVER ROUTE 128: Connecting Greenlodge St. with Royall St. and I-95 SB (Included in "Package" 3c)



**12. "UNUSED BRIDGE" OVER ROUTE 128: Connecting Greenlodge Street with Royall Street and Route I-95 Southbound**
**(included in "Package" 3c)**

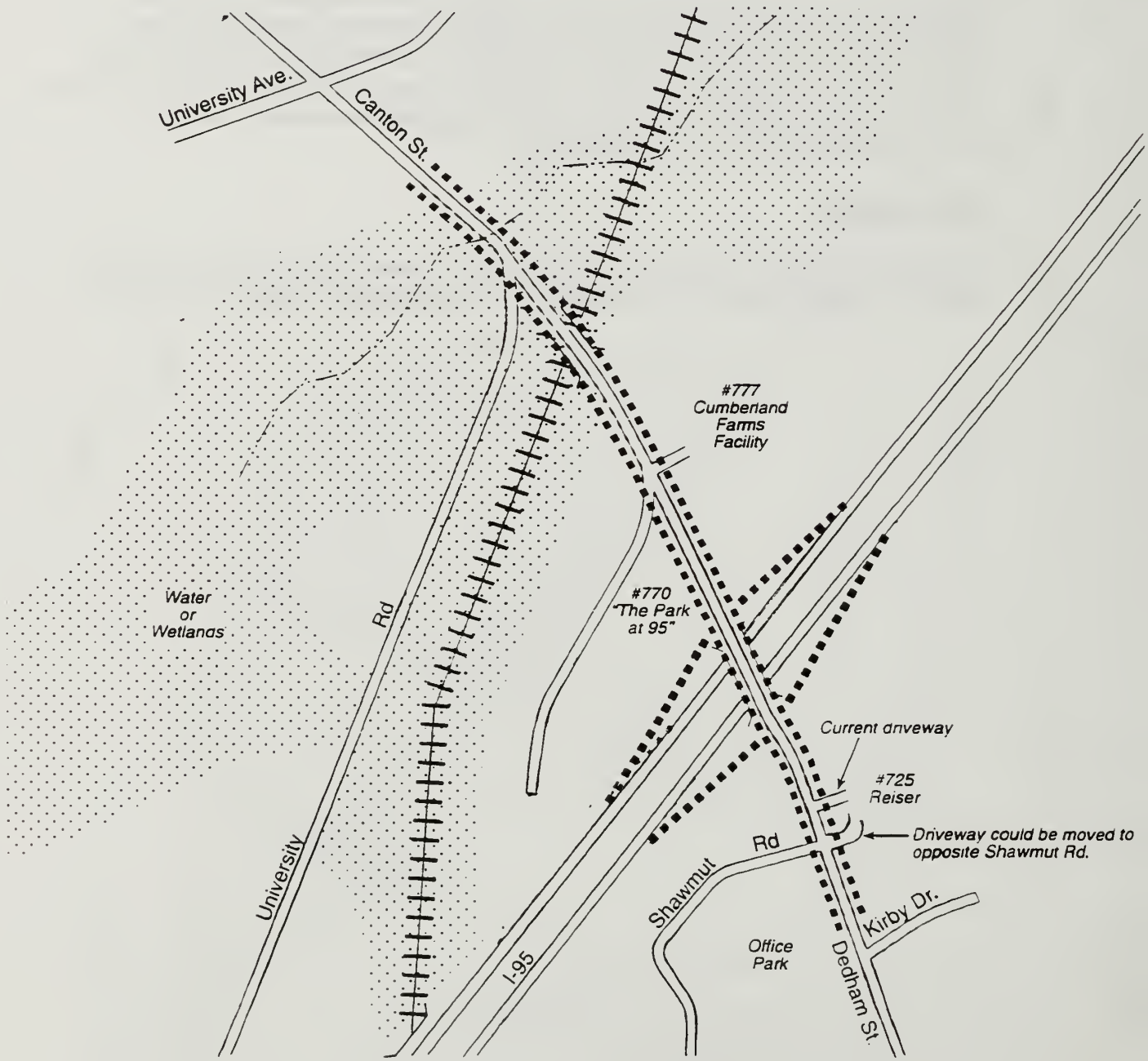
**AM Peak Hour**

This connection enables Route 128 traffic from the north to reach the Royall Street development area by using the Blue Hill Avenue Off ramp and Greenlodge Street eastbound. In the westbound direction, Royall Street development traffic destined for Route I-95 can use the direct connection instead of Route 128 through Route 138. These traffic diversions benefit Route 128 with 2% and 6% reductions northbound and southbound respectively, north of Route 138.

**PM Peak Hour**

Station and University Avenue industrial area traffic bound for Route I-95 southbound shifts from the Blue Hill Drive on-ramp to the "unused bridge" connection.

## 5. I-95 @ DEDHAM STREET: On-Ramps, Off-Ramps, local street widening
## (Included in "Packages" 2b, 2d, 3e, 3i)



**5. I-95 @ DEDHAM STREET: On-ramps, Off-Ramps, local street widening**
**(included in Packages" 2b, 2d, 3e, 3i)**

**AM Peak Hour**

This potential improvement element generally benefits Neponset, Chapman and Dedham Streets in Canton because I-95 traffic destined for the University Avenue area can now stay longer on Route I-95 northbound and exit at the proposed Dedham Street ramps instead of at the Neponset Street ramps. Therefore travel is more direct and not through the Canton residential areas east of Route I-95.

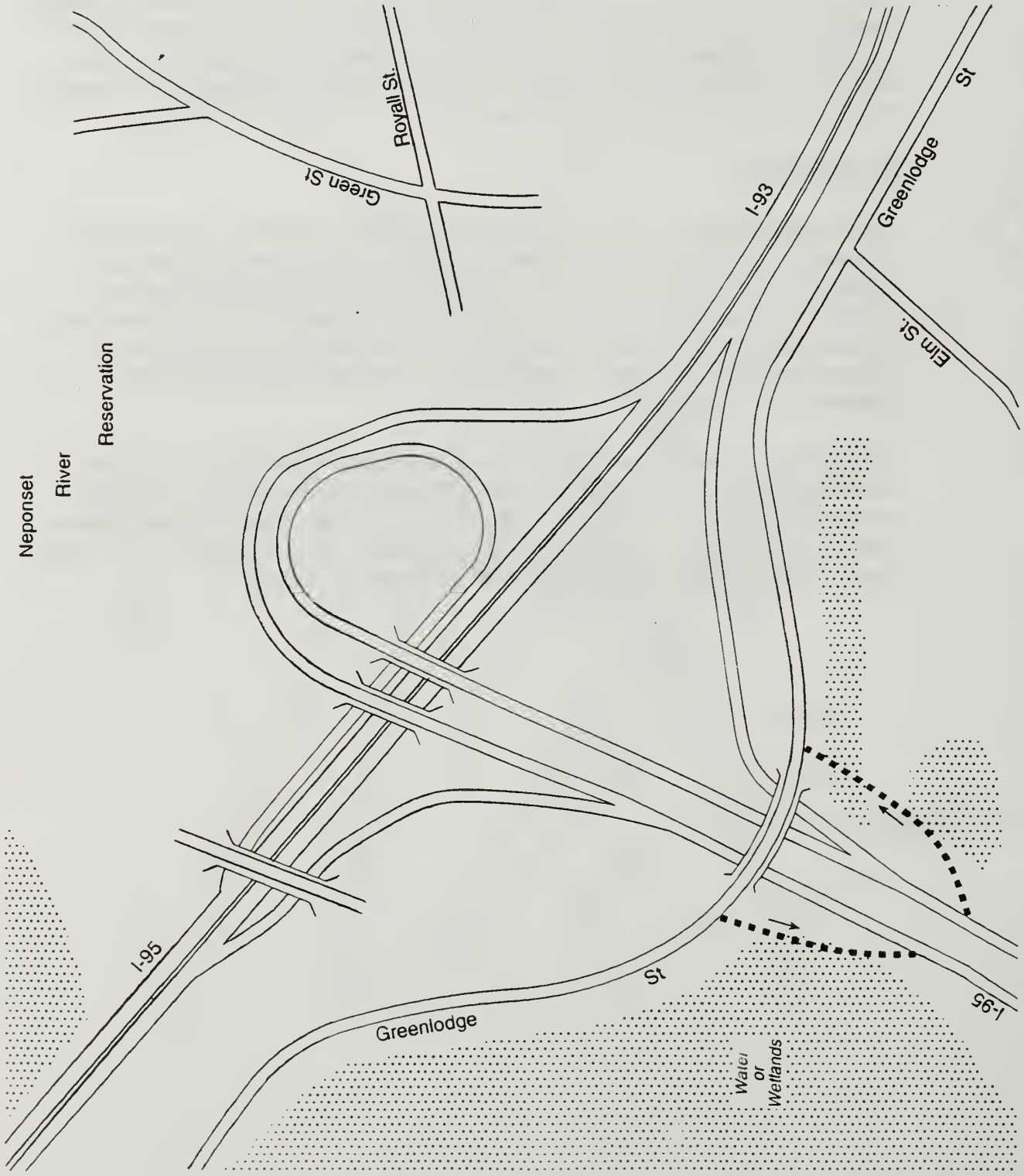
**PM Peak Hour**

The proposed interchange serves as a direct relief valve for University Avenue traffic destined for Route I-95 southbound and for Canton traffic destined for Route 128. Therefore, traffic increases are expected eastbound on Dedham Street towards the proposed new ramps. Canton traffic now reaching I-95 northbound via Neponset Street or Route 128 via local streets and the Route 138 interchange will also divert to the proposed northbound on-ramp at Dedham Street. No increase of through traffic along Dedham street is expected.

The upper University Avenue/Blue Hill Drive ramp area benefits as does the Route 128 southbound to I-95 southbound ramp. Route I-95 southbound traffic is expected to increase as University Avenue area traffic will also have the option to use the Dedham Street/I-95 path instead of the Route 1/Neponset Street path to head south on I-95. As a result, associated Route 1 southbound traffic decreases are expected.

## 11. GREENLODGE STREET / I-95 SLIP RAMPS: Northbound OFF, Southbound ON

**(Included in "packages" 3b, 3c, 3d, 3g, 3h, 3j)**



## 11. GREENLODGE STREET/I-95 SLIP RAMPS: Northbound OFF, Southbound ON

**(included in "Packages" 3b, 3c, 3d, 3g, 3h, 3j)**

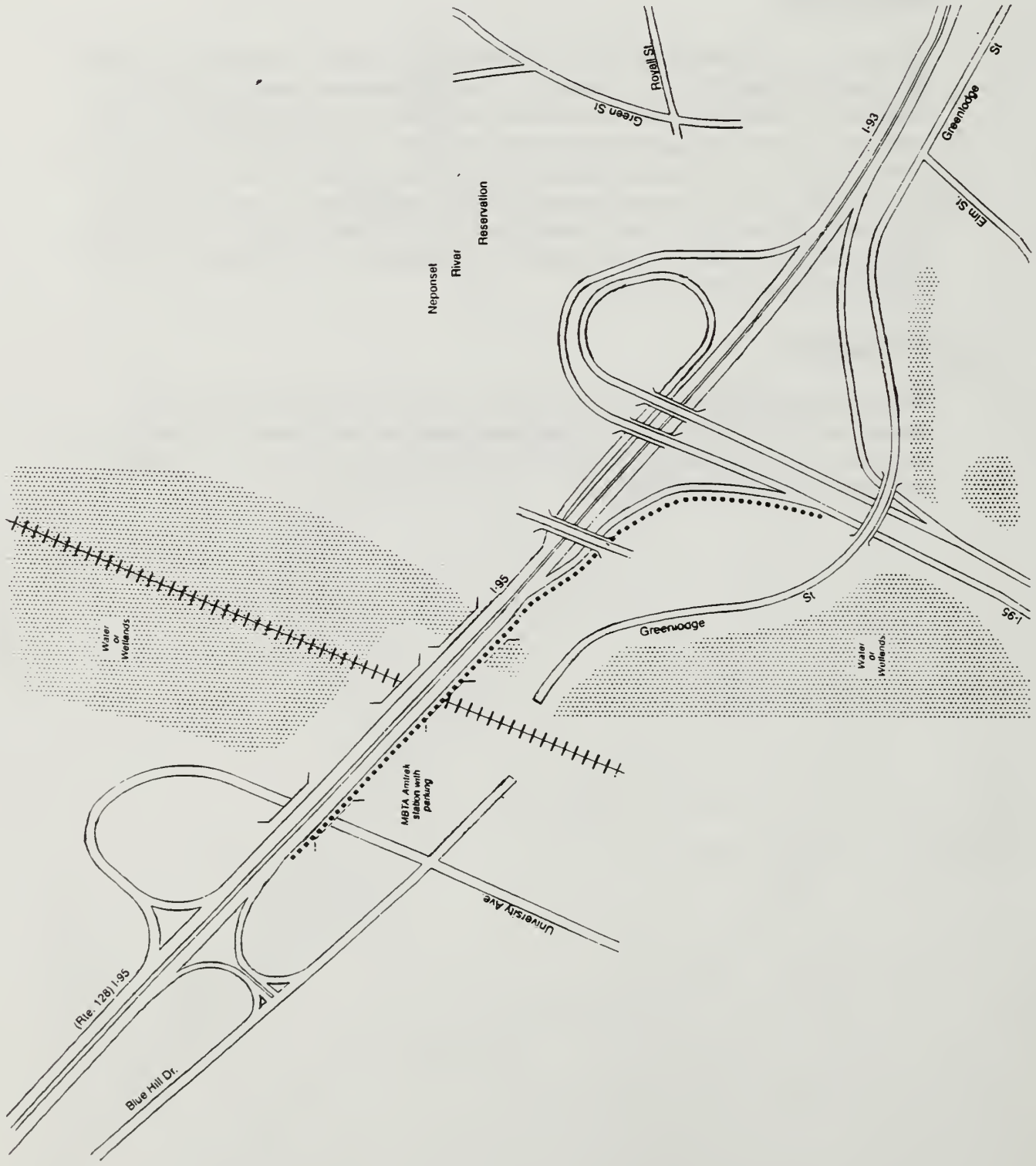
### AM Peak Hour

The proposed northbound I-95 off-ramp at Greenlodge Street is expected to carry 400 to 800 vehicles, depending on the alternative. This traffic consists mostly of I-95 traffic external to the study area which now uses the Neponset Street interchange to reach the University Avenue area and the station either through Canton or Norwood. The presence of the ramp makes travel less circuitous for general I-95 traffic, and roads in the two towns benefit. The lower volume carried by the proposed ramps is associated with the termination of Greenlodge Street at the proposed MBTA garage instead of at University Avenue; the higher traffic volume relates to the presence of the Royall Street connector off of Greenlodge Street west of I-95.

### PM Peak Hour

Traffic from the MBTA station and University Avenue industrial area uses the southbound I-95 on-ramp at Greenlodge Street, thus benefiting Route 1, Dedham Street, Neponset Street, Blue Hill Drive and Route 128 southbound on-ramp, and the Route 128 southbound to I-95 southbound ramp.

## 1. I-95 (128) SB, NORTH OF I-95: 5th lane on mainline; 2nd lane on I-95 SB Off-Ramp
## (Included in: packages: 2a, 3f)



**1. I-95 (128) SB, NORTH OF I-95: 5th lane on mainline; 2nd lane on I-95 SB off-Ramp**
**(included in "Packages" 2a, 3f)**

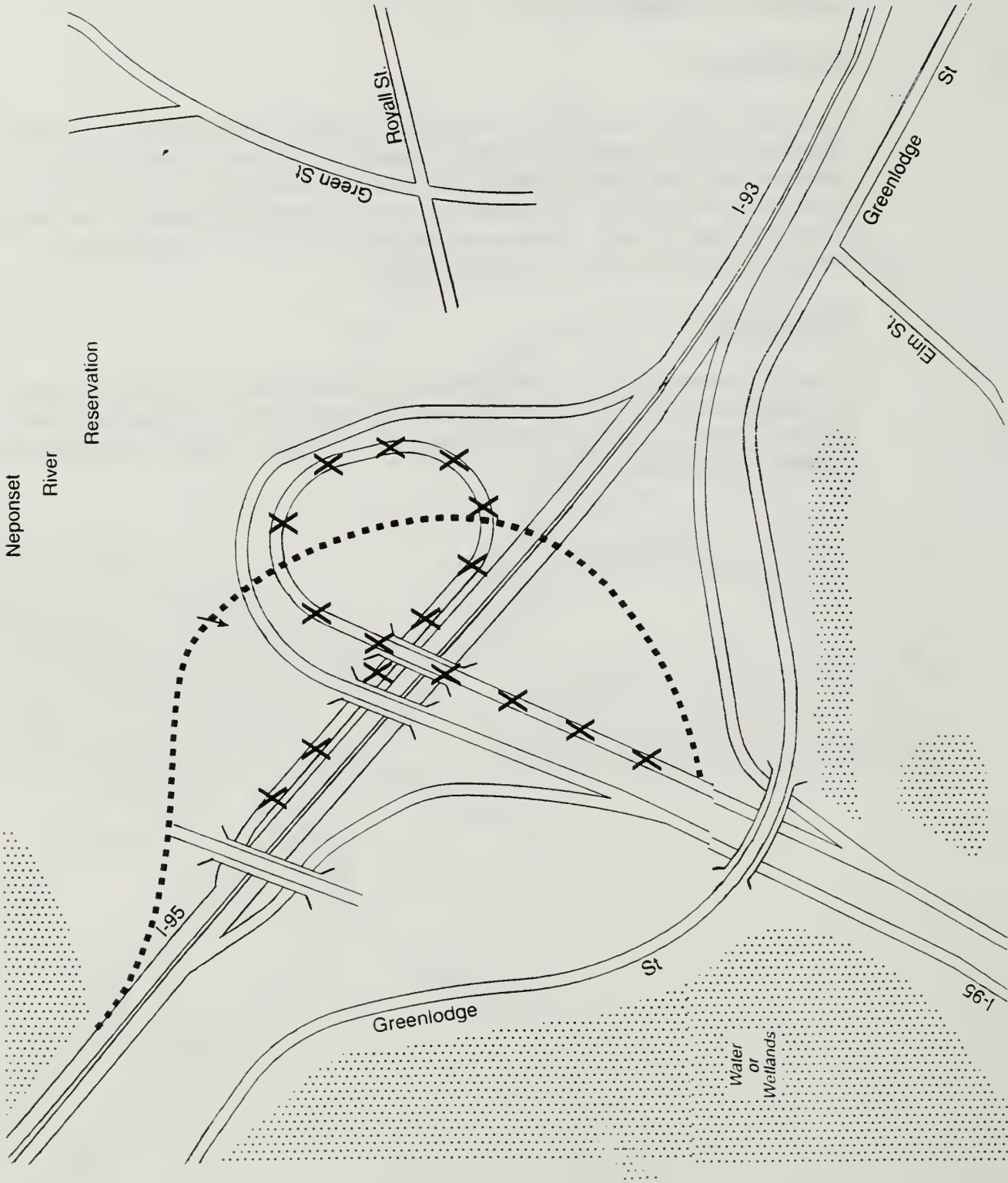
**AM Peak Hour**

Insignificant traffic volume changes are expected at Route 128 southbound and at the off-ramp due to the fifth mainline lane and the second off-ramp lane at I-95. However, it is reasonable to expect that both proposed improvements will affect positively traffic operations along the Route 128 segment between the University Avenue on-ramp and the I-95 southbound off-ramp. The extent of this positive effect can be determined by weaving analysis at a later time during this project.

**PM Peak Hour**

Some of Canton-bound traffic (mid-southern area) from Route 128 southbound which now proceeds through the Blue Hill off-ramp, University Avenue and Dedham Street is expected to follow now Route 128 and Route I-95 southbound to reach that area through Neponset Street instead.

**15. RAMP BETWEEN I-95 NB and ROUTE 128 (I-95) NB ("Dead Man's Curve): Rebuilt structure**
**(Included in 'Package" 3d)**



**15. RAMP BETWEEN I-95 NORTHBOUND AND ROUTE 128 (I-95) NORTHBOUND ("Dead Man's Curve"): Rebuilt Structure**
**(included in "Package" 3d)**

**AM Peak Hour**

The impact of this rebuilt ramp can not be assessed through this level of analysis. The reconfigured ramp is mainly a safety improvement and traffic volume changes are not expected. Nevertheless, our analysis showed a small reduction of traffic on it caused by the proposed I-95 northbound off-ramp to Greenlodge Street which is also present in Package 3d.

**PM Peak Hour**

Consistent with the observations for the AM, only operational benefits (and, therefore, safety benefits) are expected from this improvement.

## 9. I-95/I-93 ROUTE 128 INTERCHANGE : Complete rebuilding (similar to Rt. 24) (Included in "Package" 2d)

**9. I-95/I-93/RT. 128 INTERCHANGE: Complete rebuilding (similar to Route 24) (included in "Package" 2d)**

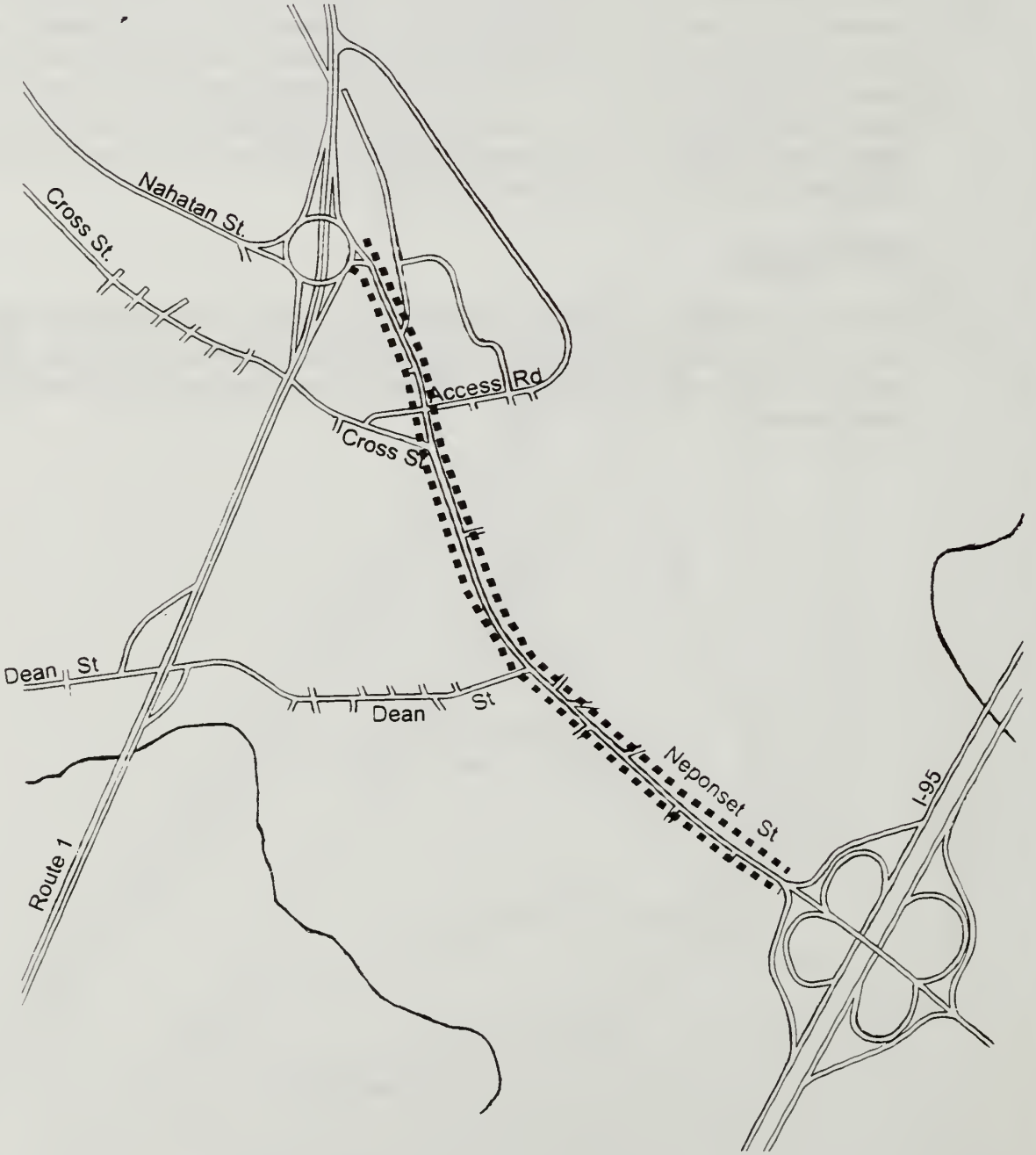
**AM Peak Hour**

This element which is primarily a safety improvement was only tested in combination with the proposed Dedham Street ramps. Because it allows for a more direct (smoother) connection between I-95 northbound and Route 128 northbound and, between Route 128 (I-93) northbound and I-95 southbound, traffic increases in the order of 30 percent along these connections are expected. This phenomenon implies traffic volume reductions along local roads which are now used as shortcuts. An example of this effect is Neponset Street east and west of I-95 which loses traffic in the direction away from the highway and gains traffic in the direction towards the highway.

**PM Peak Hour**

As in the AM. the reconstruction of this interchange along with the Dedham Street ramps cause traffic increases on Route I-95 between Neponset Street and Route 128. Route 1 and local streets such as East, Canton, Washington and Chapman Streets benefit from lower volumes.

## 7. NEPONSET STREET BETWEEN I-95 and ROUTE 1: Roadway widening (Included in "Package" 2c)



## 7. NEPONSET STREET BETWEEN I-95 AND ROUTE 1: Roadway widening (included in "Package" 2c)

### AM Peak Hour

This improvement element was tested with the Single Point Diamond at Route 1 and Everett Street/University Avenue. The combined effect of the two elements is to attract additional traffic to Neponset Street west of I-95 and Route 1. The reductions are on Route I-95, Dean Street, Dedham Street and Neponset Street east of Chapman Street.

### PM Peak Hour

As in the AM, this improvement together with the Route 1/Everett Street underpass will shift traffic from Route 128 southbound/I-95 southbound, and, to some extent, from the Dedham Street corridor to the Route 1 southbound/Neponset Street corridor.

## 10. GREENLODGE STREET BRIDGE: Rebuilt over rail line
## (Included in "Packages" 3a, 3b, 3c, 3d, 3e, 3f, 3g, 3h, 3I, 3j)

**10. GREENLODGE STREET BRIDGE: Rebuilt over rail line**
**(included in "Packages" 3a, 3b, 3c, 3d, 3e, 3f, 3g, 3h, 3i, 3j)**

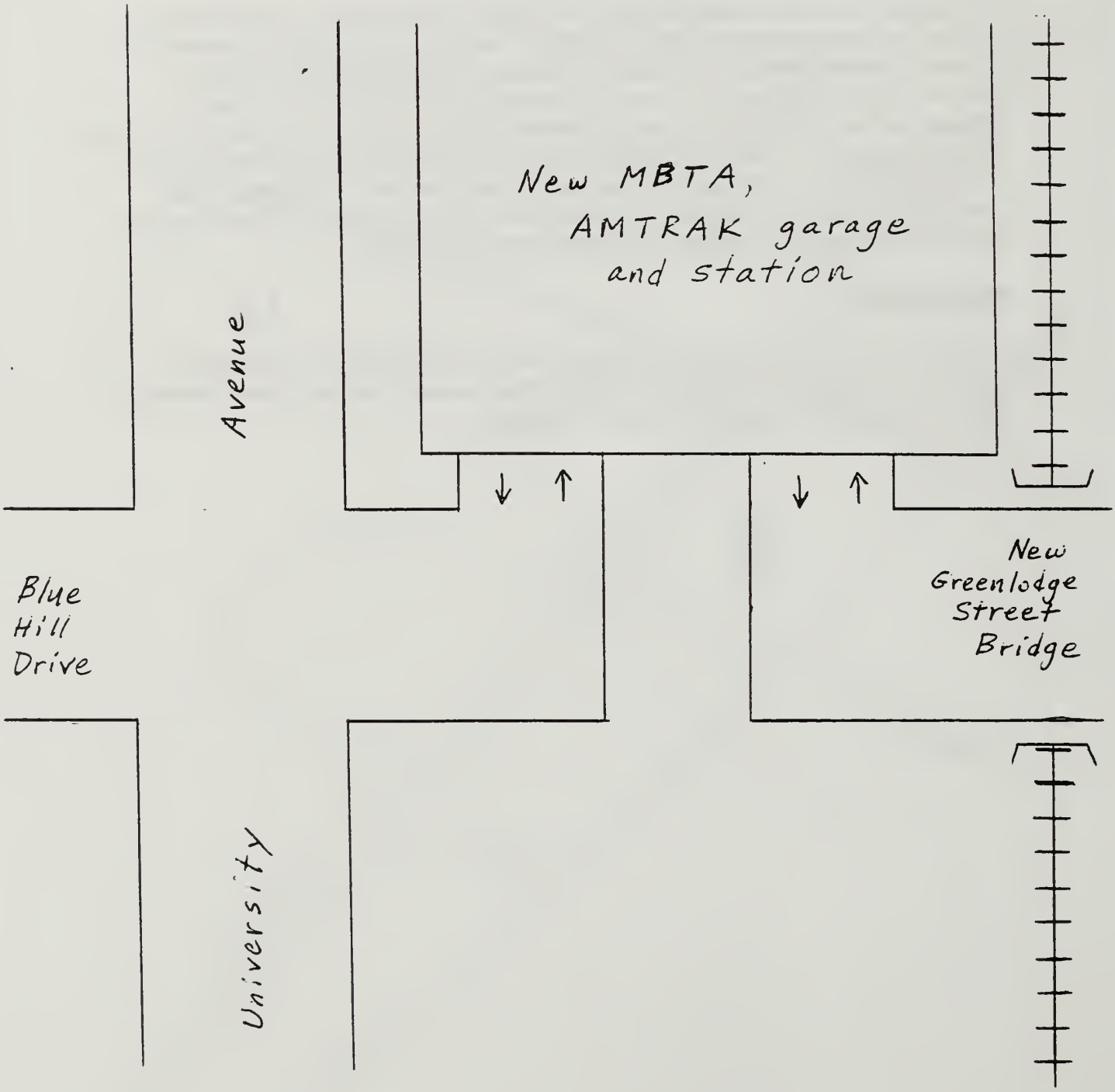
**AM Peak Hour**

The opening of the Greenlodge Bridge attracts traffic (over the rail line) in the range of 470 to 770 vehicles westbound and 0 to 250 eastbound, with the variation depending on the other elements present in the particular package. Generally, the higher volumes westbound (peak direction in the morning) are associated with the I-95 off-ramp at Greenlodge Street; the higher volumes eastbound are associated with the closure of the Blue Hill on-ramp to Route 128 southbound and the Royall Street connection with Greenlodge Street. In package 3a, where the new bridge is the only element present, reductions of traffic are expected along paths leading to the University Avenue area from the east which include segments of Dedham Street and Route 128.

**PM Peak Hour**

The opening of the bridge at Greenlodge Street allows for University Avenue traffic bound for northern Canton to use Greenlodge Street instead of the path Route 128/Route 138. The amount of this traffic is under 100 vehicles.

## 19. ENDING GREENLODGE STREET (WEST OF BRIDGE) AT STATION
**(included in "Package" 3g)**



## 19. ENDING GREENLODGE STREET (WEST OF BRIDGE) AT STATION
**(included in "Package" 3g)**

### AM Peak Hour

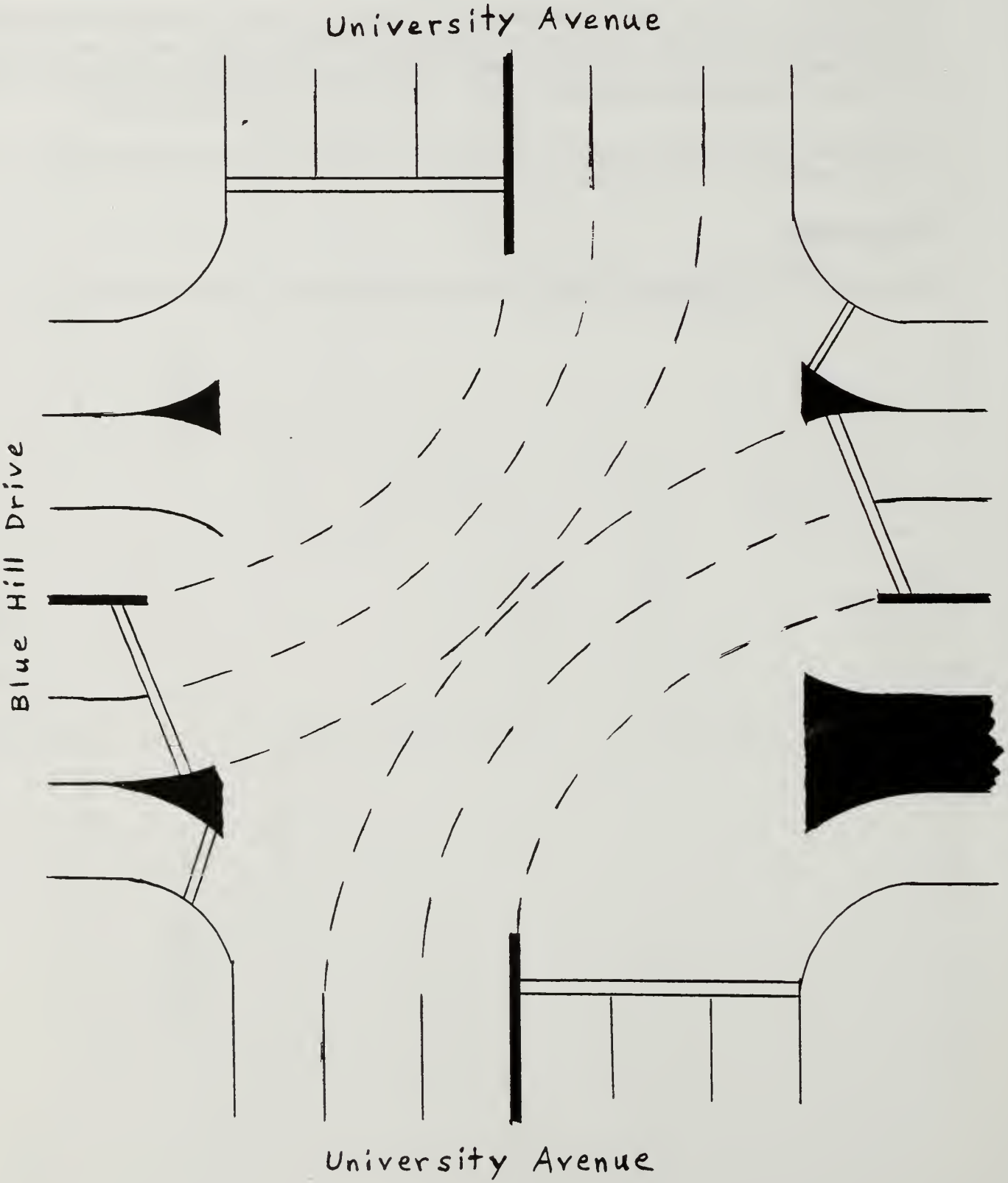
The only significant change from this element is that the diversion of traffic *from* Blue Hill Drive-to-Rt 128 SB On-Ramp-to-I-95 SB, *to* the Greenlodge Street-to-I-95 SB slip ramp, is smaller than if the new bridge is linked all the way to University Avenue. This is due to the fact that only exiting *station* traffic can use the new bridge and the Greenlodge Street slip ramp, not the industrial park traffic.

An additional change is the elimination of some traffic (100 vehicles) using the rebuilt bridge to "cut through" onto Route 128 NB via University Avenue.

### PM Peak Hour

The reduced diversion phenomenon described for the AM peak hour is similar in the PM peak hour.

## 20. ELIMINATING EAST-WEST THROUGH TRAFFIC ON BLUE HILL DRIVE/GREENLODGE STREET AT UNIVERSITY AVENUE
**(included in "Package" 3h)**



## 20. ELIMINATING EAST-WEST THROUGH TRAFFIC ON BLUE HILL DRIVE/GREENLODGE STREET AT UNIVERSITY AVENUE

**(included in "Package" 3h)**

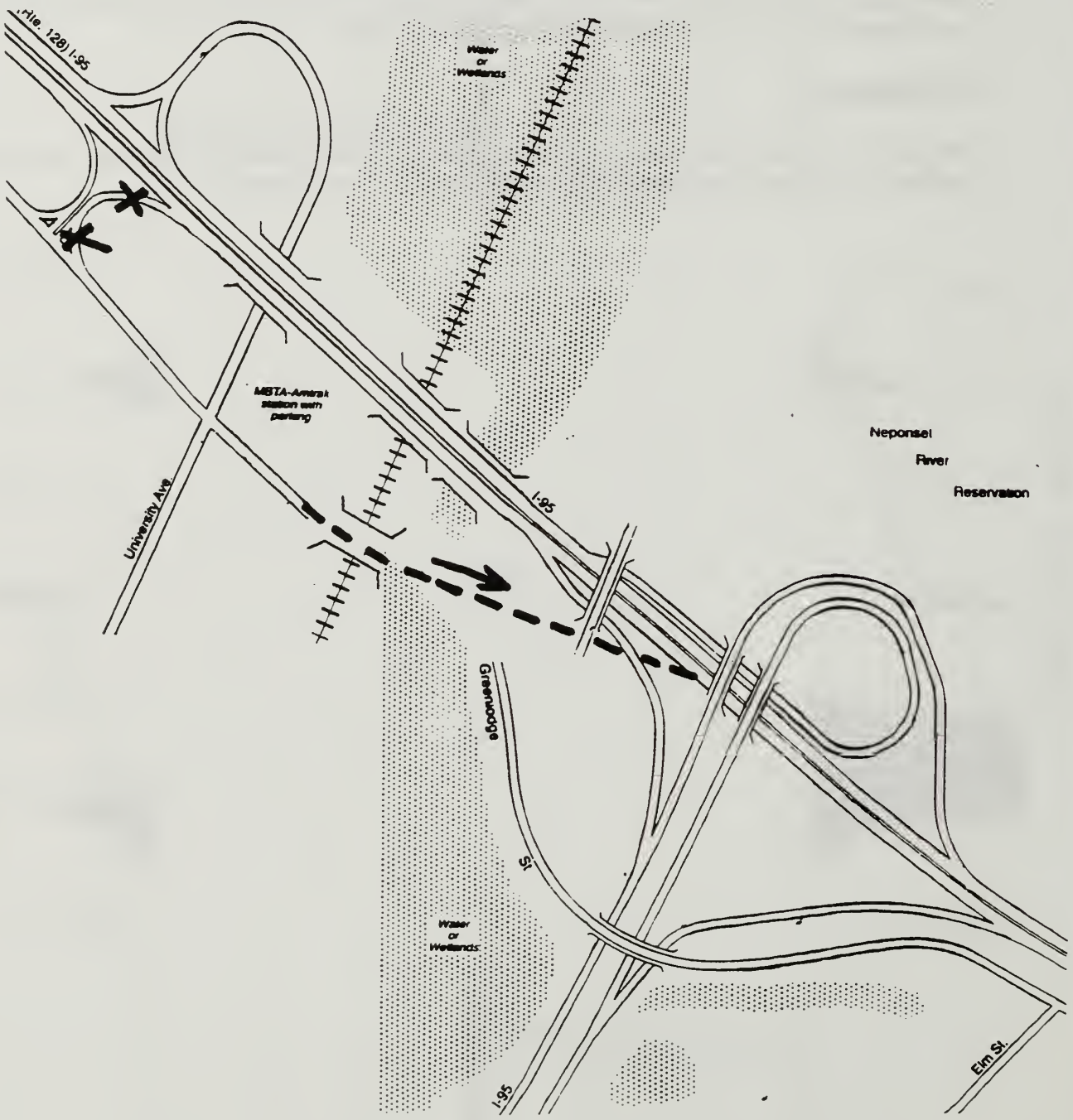
### AM Peak Hour

This restriction of East-West through traffic has virtually no impact since there are only 10-60 vehicles travelling through the intersection in the AM peak hour. With the restriction in place, these vehicles find alternative routes such as Route 128 and Dedham Street.

### PM Peak Hour

The lack of an impact from restricting through traffic is similar in the PM peak hour; only 10-20 vehicles travel East-West through the intersection without the restriction.

**22. CLOSE ON-RAMP FROM BLUE HILL DRIVE TO ROUTE 128 SB ON-RAMP / ADD AN I-93 NB (ROUTE 128 SB) ON-RAMP FROM GREENLODGE STREET / ADD AN I-95 SB ON-RAMP FROM GREENLODGE STREET (ALT. DEDHAM STREET) (included in "Package" 3j)**



**22. CLOSE ON-RAMP FROM BLUE HILL DRIVE TO ROUTE 128 SB ON-RAMP / ADD AN I-93 NB (ROUTE 128 SB) ON-RAMP FROM GREENLODGE STREET / ADD AN I-95 SB ON-RAMP FROM GREENLODGE STREET (ALT. DEDHAM STREET)** **(included in "Package" 3j)**

**AM Peak Hour**

In the AM peak hour, 250 vehicles shift as follows:

- 50 vehicles to the Greenlodge Street (alt. Dedham Street) -I-95 southbound ramp;
- 150 vehicles to the Greenlodge Street-Route 128 southbound ramp;
- the remainder to nearby locations such as the East Street-Route 128 southbound on-ramp.

**PM Peak Hour**

This element shifts over 1700 PM peak hour vehicles:

- 420 vehicles to the Greenlodge Street (alt. Dedham Street) -I-95 southbound slip ramp;
- 720 vehicles to the Greenlodge Street-Route 128 southbound ramp;
- 440 vehicles to the East Street-Route 128 southbound ramp;
- the remainder to locations such as Neponset Street eastbound west of I-95, and Route 138 northbound south of Route 128.

The key benefit would be almost 1200 fewer vehicles in the congested weaving section on Route 128 southbound between Blue Hill Drive and I-95 southbound as well as upstream.

## 13. GREENLODGE STREET: One-way WB between Elm Street and new I-95 slip ramp area (Included in "Package" 3c)

**13. GREENLODGE STREET: One-way westbound between Elm Street and new I-95 slip ramp area**
**(included in "Package" 3c)**

**AM Peak Hour**

In this package, Greenlodge Street carries the lowest westbound traffic of all Packages where Greenlodge Street is available for travel between Elm Street and University Avenue. It appears that the reason is that the I-95 northbound slip ramp at Greenlodge Street carries the highest traffic volume (compared to other Packages which also contain this slip ramp) due to the Royall Street connector which terminates at Greenlodge Street and absorbs some of the ramp's I-95 northbound traffic. As Greenlodge Street west of the slip ramp becomes congested with I-95 traffic, it is avoided by commuters with origins east of Elm Street and south of Greenlodge Street in Canton.

**PM Peak Hour**

Practically no traffic uses Greenlodge Street under this element in the evening peak hour.

## 14. GREENLODGE STREET: Closed between Elm Street and new I-95 slip ramp area (Included in "Package" 3d)

**14. GREENLODGE STREET: Closed between Elm Street and new I-95 slip ramp area**
**(included in "Package" 3d)**

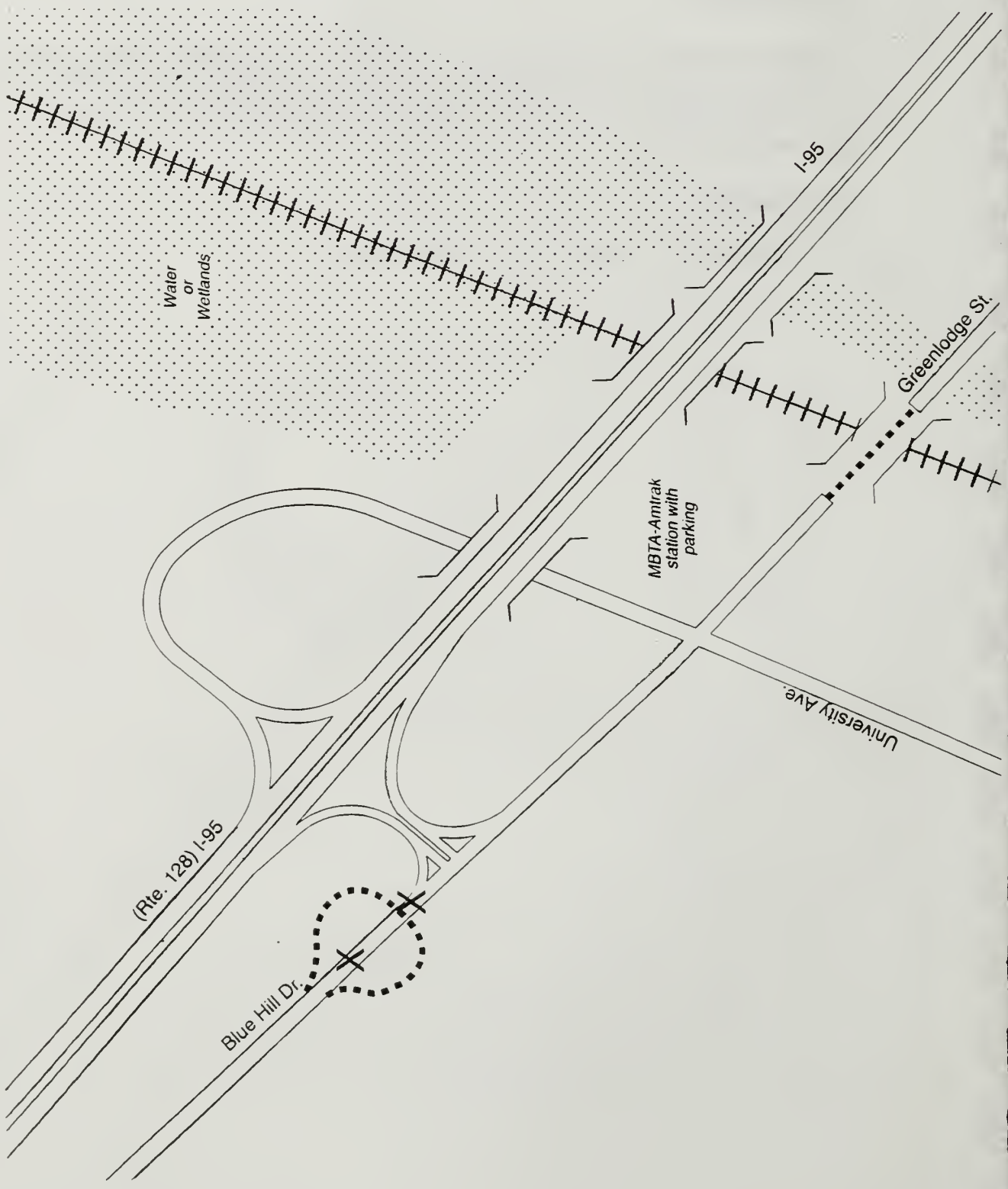
**AM Peak Hour**

This element allows for no access to the University Avenue area and the station through Greenlodge Street east of I-95. Impacts include reductions of traffic along Elm Street and Greenlodge Street. Route 138 traffic north and south of Greenlodge Street remains essentially unchanged.

**PM Peak Hour**

No traffic enters Greenlodge Street west of Elm Street.

## 16. BLUE HILL DRIVE: Closed west of Route 128 SB ramps
## (i.e., creation of a cul-de-sac)
## (Included in "Package" 3d)



**16. BLUE HILL DRIVE: Closed west of Route 128 SB ramps (i.e. creation of a cul-de-sac)**
**(included in "Package" 3d)**

**AM Peak Hour**

Traffic reductions from this element include Blue Hill Drive east and west of the cul-de-sac; University Avenue north of Blue Hill Drive; and: Route 128 southbound on-ramp. The Route 128 southbound off-ramp remains the same. University Avenue southbound south of Blue Hill Drive shows a traffic increase indicating a diversion of traffic from, possibly, a right turn into Blue Hill Drive to a through movement along University Avenue.

**PM Peak Hour**

Closing Blue Hill Drive west of the Route 128 southbound ramp shifts traffic to Canton Street.

# [APPENDIX B-6]

## TRAFFIC MODEL CALIBRATION

A traffic model is expected to "know" how much traffic will be produced by and attracted to each zone and which paths the traffic is most likely to take between zones. In order to check on a model's accuracy, test runs are performed in which it is asked to replicate existing conditions for which data have been collected. The results of the test runs are compared with the collected data, and, if necessary, the model is adjusted to improve its ability to replicate existing conditions. This process is called calibration.

To calibrate the distribution of traffic to and from the two Route 128 Station zones in its traffic models, CTPS made use of the results of a license plate survey performed by Earth Tech, the consultants hired by the MBTA to prepare the Route 128 Intermodal Facility (station/garage) environmental impact report. The survey recorded the license plates of all vehicles parked in the Route 128 Station main parking lot, on the west side of the rail line, or parked on the east side, in the smaller parking lot and along Greenlodge Street. The survey's distribution, by town of origin, of the number of vehicles parked on the west side (CTPS traffic zone 1) and on the east side (zone 2) is given below.[1]

| | West Side (Zone 1) | | East Side (Zone 2) | | Both Sides (Zones 1+2) | |
|---|---|---|---|---|---|---|
| Town of Origin | Vehicles Parked | % of West Side Total | Vehicles Parked | % of East Side Total | Vehicles Parked | % of Total |
| Canton | 30 | (5%) | 82 | (43%) | 112 | (15%) |
| Westwood | 85 | (15%) | 3 | (2%) | 88 | (12%) |
| Norwood | 21 | (4%) | 1 | (1%) | 22 | (3%) |
| Dedham | 23 | (4%) | 2 | (1%) | 25 | (3%) |
| Towns east of study area | 145 | (26%) | 84 | (44%) | 229 | (30%) |
| Towns west of study area | 261 | (46%) | 18 | (10%) | 279 | (37%) |
| TOTAL | 565 | (100%) | 190 | (100%) | 755 | (100%) |

These survey results were used to adjust its AM and PM peak hour gravity model seed trip tables. All trips to and from zones 1 and 2 were thus adjusted, with any trip ends in the remaining 43 internal, and 28 external, zones changed accordingly.

A second license plate survey performed by Earth Tech was utilized by CTPS to calibrate its PM peak hour models (1995 and 2020). This survey measured the distribution of traffic leaving the rail station and business park area via the Blue Hill Drive–Route 128 southbound on-ramp and continuing on either I-95 southbound or I-93 northbound. The desire was to obtain a measure of the weaving operations which exist on Route 128 southbound between Blue Hill Drive and the I-95 southbound off-ramp, a

[1]The license plate matching rate was 77% of the total sample. See "Route 128 Intermodal Facility, Dedham/Westwood, Massachusetts," Draft Environmental Impact Report, Volume 1, prepared by Earth Tech and Frederic R. Harris, 30 April 1998, pp. 4–17.

segment experiencing chronic PM peak hour congestion. From the survey results, the following was extracted[2]:

- 823 (matched) vehicles entered Route 128 southbound from Blue Hill Drive between 5:00 and 6:00 PM
- 556 of the 823 vehicles continued on I-93 northbound (68%)
- 267 of the 823 vehicles continued on I-95 southbound (32%)

By running selected-link traffic assignments for both the 1995 and 2020 PM peak hour models, it was found that of the traffic entering Route 128 southbound from Blue Hill Drive in the 1995 model, 71% of the vehicles continued on I-93 northbound and 29% on I-95 southbound. In the 2020 model, the results showed 70% continuing on I-93 northbound and 30% on I-95 southbound. This matched favorably with the Earth Tech results; therefore, no adjustments to the trip ends were made in the CTPS PM peak hour models.

The final adjustment to the AM and PM peak hour models involved the number of parked vehicles assumed at Route 128 Station for the three analysis years, 1995, 2005, and 2020. Since zones 1 and 2 were not "real" zones containing either households or employment, thereby producing or attracting vehicle trips, a surrogate measure had to be attached to each of the two zones to reflect current-year and future-year trip ends (i.e., vehicles parking at the station). Using appropriate Institute of Transportation Engineers (ITE) trip generation rates, as well as MBTA and Amtrak estimates for parking usage in 2005 and 2020, the following parking space data and surrogate non-retail employment in zones 1 and 2 were assumed in the modelling process:

West Side (Zone 1)

| Trip Table (Year) | No New Garage In Place: Vehicles Parked | No New Garage In Place: "Employees" | New Garage In Place: Vehicles Parked | New Garage In Place: "Employees" |
|---|---|---|---|---|
| 1995 | 800 | 430 | N.A. | N.A. |
| 2005 | 800 | 430 | 2,350 | 1,575 |
| 2020 | 800 | 430 | 2,700 | 1,860 |

East Side (Zone 2)

| Trip Table (Year) | No New Garage In Place: Vehicles Parked | No New Garage In Place: "Employees" | New Garage In Place: Vehicles Parked | New Garage In Place: "Employees" |
|---|---|---|---|---|
| 1995 | 250 | 110 | N.A. | N.A. |
| 2005 | 250 | 110 | 0 | 0 |
| 2020 | 250 | 110 | 0 | 0 |

[2]Ibid, pp. 4-20–4-21. The survey license plate matching results were not available.

It was assumed in this analysis that east side (zone 2) parking would be prohibited once the new garage was in place (i.e., in the analysis years 2005 and 2020). The projected future-year west side parking spaces were broken down as follows: in 2005, 1,900 MBTA and 450 Amtrak spaces; and in 2020, 2,200 MBTA and 500 Amtrak spaces.

## APPENDIX C

**Developing a Preferred Alternative**
(Technical memoranda)

C-1 Ranking of Roadway Improvement Elements

C-2 Recommended Potential Study Area Roadway Improvements

C-3 Traffic Volumes: 1995 Base Year; 2005 with Dedham Street–To–I-95 SB Slip Ramp Only; 2020 'Preferred Alternative'

# [APPENDIX C-1]

## MEMORANDUM

**TO:** **University Avenue / I-95 / Route 128 Regional Traffic Study Task Force**

**27 February, 1998**

**FROM:** **Robert Sievert**

**RE:** **Ranking of Roadway Improvement Elements**

CTPS has completed its evaluation process with respect to suggested roadway improvement elements throughout the project study area. Twenty-two distinct elements had been included in the modelling and traffic assignment process during the past year. Of these, nine are proposed to be included in a Proposed Preferred Alternative.

All the elements have been evaluated according to seven specific criteria:

- -- traffic congestion
- -- overall safety
- -- access, circulation
- -- neighborhood impact
- -- environmental impact
- -- economic development
- -- estimated cost

In addition, CTPS has met with MassHighway Design Section staff in order to determine the engineering feasibility of each of the elements put forth. Final evaluation and approval is pending.

The attached table describes each element included in the Proposed Preferred Alternative, as well as those rejected. Brief comments are included for each element as well; positive characteristics of those elements included, and basic explanations for those excluded.

At the upcoming Task Force meeting on **Tuesday 10 March at the Neponset Valley Chamber of Commerce**, there will be a presentation and discussion of the Proposed Preferred Alternative. At that time, associated graphical representations of the Alternative should be available to Task Force members.

RES/res

# UNIVERSITY AVE / I-95 / I-93 REGIONAL TRAFFIC STUDY

## Evaluation of Improvement Alternatives: Groupings of Elements by Function

| | EVALUATION CRITERIA | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1. Traffic Congestion | 2. Overall Safety | 3. Access, Circulation | 4. Neighbor-hood Impact | 5. Envir'l Impact | 6. Economic Development | 7. Estimated Cost (in $000) | TOTAL SCORE |
| (ELEMENT 17) -- **Close Ponkapoag / I-93 (Rt 128) interchange** | 0 | 0 | (–) | 0 | 0 | 0 | 20 | (–) |
| (ELEMENT 21) -- **Prohibit E-W traffic on Canton St at University Ave** | (–) | 0 | (–) | 0 | 0 | 0 | N/A | (–) |
| (ELEMENT 3) -- **Route 1 / Everett Street improvements** | + | + | + | + | + | + | 8-10 M | + |
| (ELEMENT 4) -- **Construction of an East-West road between Route 138 and Pleasant St** | Currently being analyzed by VHB for the Town of Canton; see DEIR -- EOEA #10704, 02-97 | | | | | | | |
| **Route 138 improvements** | | | | | | | | |
| (ELEMENT 6a) -- Traffic signal at Greenlodge Street Intersection | (–) | + | 0 | 0 | 0 | 0 | 150 | 0 |
| (ELEMENT 6b) -- Widening of Route 138 between Washington Street and Route 128 | Included as a part of Reebok's Off-site Roadway Improvements | | | | | | | + |
| (ELEMENT 18) -- Widening of all approaches at Randolph Street intersection | Included as a part of Reebok's Off-site Roadway Improvements | | | | | | | + |
| **Access to / from Royall Street** | | | | | | | | |
| (ELEMENT 2) -- Route 138 / Royall Street intersection Improvements | Included as a part of Reebok's Preferred Site Access Plan | | | | | | | + |
| (ELEMENT 8a, 12) -- Connection (On-ramp) from Royall Street to I-95 SB | N/A | ***FAIL*** | N/A | N/A | N/A | N/A | 1 M | ***FAIL*** |
| (ELEMENT 8b) -- Connection (On-ramp) from Royall Street to Route 128 NB | N/A | ***FAIL*** | N/A | N/A | N/A | N/A | 1.5 M | ***FAIL*** |
| (ELEMENT 8c) -- Connection (Off-ramp) from I-95 NB to Royall Street | 0 | (–) | + | (–) | (–) | + | 1.5 M | 0 |
| (ELEMENT 12) -- Connection between Greenlodge Street and Royall Street via the "Unused" Bridge over Route 128 | 0 | 0 | + | 0 | (–) | 0 | 2 M | 0 |
| (ELEMENT -- ) -- **Other Intersections** | Analyze improvement options for additional intersections for year 2020 failure conditions:<br>o Dedham St / Washington St (AM, PM)<br>o Canton St / Blue Hill Dr (PM)<br>o Route 138 / Greenlodge Street (AM, PM) | | | | | | | + |

(Robert Sievert, CTPS, 980309, EvTabAl4.xls)

## Evaluation of Improvement Alternatives: Groupings of Elements by Function (cont.)

(Robert Sievert, CTPS, 980309, EvTabAl4 xls)

| | EVALUATION CRITERIA | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1. Traffic Congestion | 2. Overall Safety | 3. Access, Circulation | 4. Neighbor-hood Impact | 5. Envir'l Impact | 6. Economic Development | 7. Estimated Cost (in $000) | TOTAL SCORE |
| **University Ave / Station area access to/from the South** | | | | | | | | |
| o Dedham Street / I-95 slip ramps | | | | | | | | |
| (ELEMENT 5a) -- On-ramp to I-95 SB ONLY | + | + | + | + | + | + | 300-500 | + |
| (ELEMENT 5b) -- On-ramp to I-95 SB / Off-ramp from I-95 NB | + | + | + | + | + | + | 800-1.2 M | + |
| (ELEMENT 5c) -- On-ramp to I-95 NB / Off-ramp from I-95 SB | + | (–) | + | 0 | 0 | + | 800-1.2 M | 0 |
| (ELEMENT 5d) -- Channelization on Dedham St between Kirby Dr and University Ave | + | + | + | 0 | 0 | + | 500-1 M | + |
| o Greenlodge Street / I-95 slip ramps | | | | | | | | |
| (ELEMENT 11) -- On-ramp to I-95 SB / Off-ramp from I-95 NB | N/A | *FAIL* | N/A | N/A | N/A | N/A | 600-1 M | *FAIL* |
| (ELEMENT 12) -- On-ramp to I-95 SB via "Unused" Bridge over Rt 128 / Off-ramp from I-95 NB | N/A | *FAIL* | N/A | N/A | N/A | N/A | 600-1 M | *FAIL* |
| o Route 128 / I-95 interchange improvements | | | | | | | | |
| (ELEMENT 1) -- 5th lane on Route 128 SB between Blue Hill Drive and I-95 / 2nd lane on ramp between Route 128 SB and I-95 SB | + | + | 0 | 0 | 0 | 0 | 1.5-2 M | + |
| (ELEMENT 15) -- Fly-over ramp from I-95 NB to Route 128 NB | + | + | 0 | 0 | 0 | 0 | 10-15 M | + |
| (ELEMENT 9) -- Complete rebuilding of I-95 / I-93 interchange (a la Route 24) | N/A | N/A | N/A | N/A | *FAIL* | N/A | 25 M | *FAIL* |
| o (ELEMENT 7) -- Neponset St widening between I-95 and Route 1 | + | 0 | 0 | (–) | 0 | 0 | 1.3 M | (–) |
| **University Ave / Station area access to/from the East** | | | | | | | | |
| (ELEMENT 10) -- Greenlodge Street Bridge over railroad tracks | 0 | 0 | + | (–) | 0 | 0 | 600-800 | 0 |
| *(NOTE: Elements 19, 20, and 22 include a rebuilt Greenlodge Street Bridge)* | | | | | | | | |
| (ELEMENT 19) -- End Greenlodge Street Bridge at station, not at University Avenue | + | 0 | (–) | 0 | 0 | (–) | N/A | (–) |
| (ELEMENT 20) -- Prohibit E-W through traffic on Blue Hill Drive at University Ave | 0 | 0 | (–) | 0 | 0 | (–) | N/A | (–) |
| (ELEMENT 22) -- Close On-ramp from Blue Hill Drive to Route 128 SB / / Add On-ramp from Greenlodge Street to I-93 NB (route 128 SB) | + | + | 0 | 0 | 0 | 0 | 2-5 M | + |
| (ELEMENT 13) -- Greenlodge Street one-way WB west of Elm Street | 0 | 0 | (–) | 0 | 0 | (–) | 10 | (–) |
| (ELEMENT 14) -- Greenlodge Street closed west of Elm Street | 0 | 0 | (–) | + | 0 | (–) | 5 | (–) |
| **University Ave / Station area access to/from the West** | | | | | | | | |
| (ELEMENT -- ) -- Stop signs for Blue Hill Drive traffic west of Route 128 SB ramps | + | + | (–) | 0 | 0 | 0 | 200-300 | + |
| (ELEMENT 16) -- Cul-de-sac on Blue Hill Drive west of Route 128 SB ramps | N/A | *FAIL* | N/A | N/A | N/A | N/A | 100-200 | *FAIL* |
| (ELEMENT -- ) -- Move Route 128 SB / Blue Hill Drive ramps westward (to improve weave) | + | + | 0 | (–) | 0 | 0 | 500-750 | + |

# [APPENDIX C-2]

## MEMORANDUM

**TO:** **University Avenue / I-95 / I-93 Regional Traffic Study Task Force** **7 April, 1998**

**FROM:** **Robert Sievert**

**RE:** **Recommended Potential Study Area Roadway Improvements**

The attached information describes recommendations with respect to potential study area roadway improvements. The recommendations were generally presented at last month's Task Force meeting as the outcome of the evaluation process, and have since that time undergone further engineering and feasibility analysis by MassHighway highway design staff.

The first attachment allocates each recommended improvement element into a short-range or long-range category, while also listing a general cost estimate for each element. There is also a third category, which groups those long-range elements which are not recommended at this time, but which are still under consideration. Only one element falls in the short-range category (on-ramp from Dedham Street to I-95 SB), while the remaining improvement elements are of the long-range variety.

Please keep in mind that two other roadway improvements have been assumed to be in place throughout the analysis in any of the future year Build scenarios: intersection improvements at University Avenue / Blue Hill Drive; and, a fourth general purpose travel lane on Route 128 (I-95 / I-93).

The second attachment is a map of the entire study area and depicts the general location of each improvement element recommended. The improvements are descriptive only and are not to scale.

RES/res

UNIVERSITY AVE / I-95 / ROUTE 128 REGIONAL TRAFFIC STUDY
Improvement Elements Recommended for Implementation

- Short-Range Recommendations:

| | Estimated Cost |
|---|---|
| -- On-ramp from Dedham Street to I-95 SB | $800,000 |
| **Short-Range Total:** | **$800,000** |

- Long-Range Recommendations:

| | |
|---|---|
| -- Channelization on Dedham St near I-95 ramps and at Shawmut Rd; rebuild bridge over Neponset River for truck traffic | $1,000,000 |
| -- 5th lane on Route 128 SB between Blue Hill Drive and I-95 / 2nd lane on ramp between Route 128 SB and I-95 SB | $2,000,000 |
| -- Fly-over ramp from I-95 NB to Route 128 NB | $13,000,000 |
| -- Greenlodge Street Bridge over railroad tracks | $800,000 |
| -- Close On-ramp from Blue Hill Drive to Route 128 SB / Add On-ramp from Greenlodge Street to Route 128 SB | $5,000,000 |
| -- Greenlodge St *closed* west of Elm Street | $5,000 |
| -- Stop signs for Blue Hill Drive traffic east and west of Route 128 SB off-ramp; improve alignment of off-ramp | $300,000 |
| -- Route 1 / Everett Street improvements | $9,000,000 |
| -- Route 138 / Royall Street intersection improvements | *(Reebok improvements)* |
| -- Widening of Route 138 north and south of Washington St | *(Reebok improvements)* |
| -- Widening of all approaches at Randolph Street intersection | *(Reebok improvements)* |
| **Long-Range Total:** | **$31,100,000** |

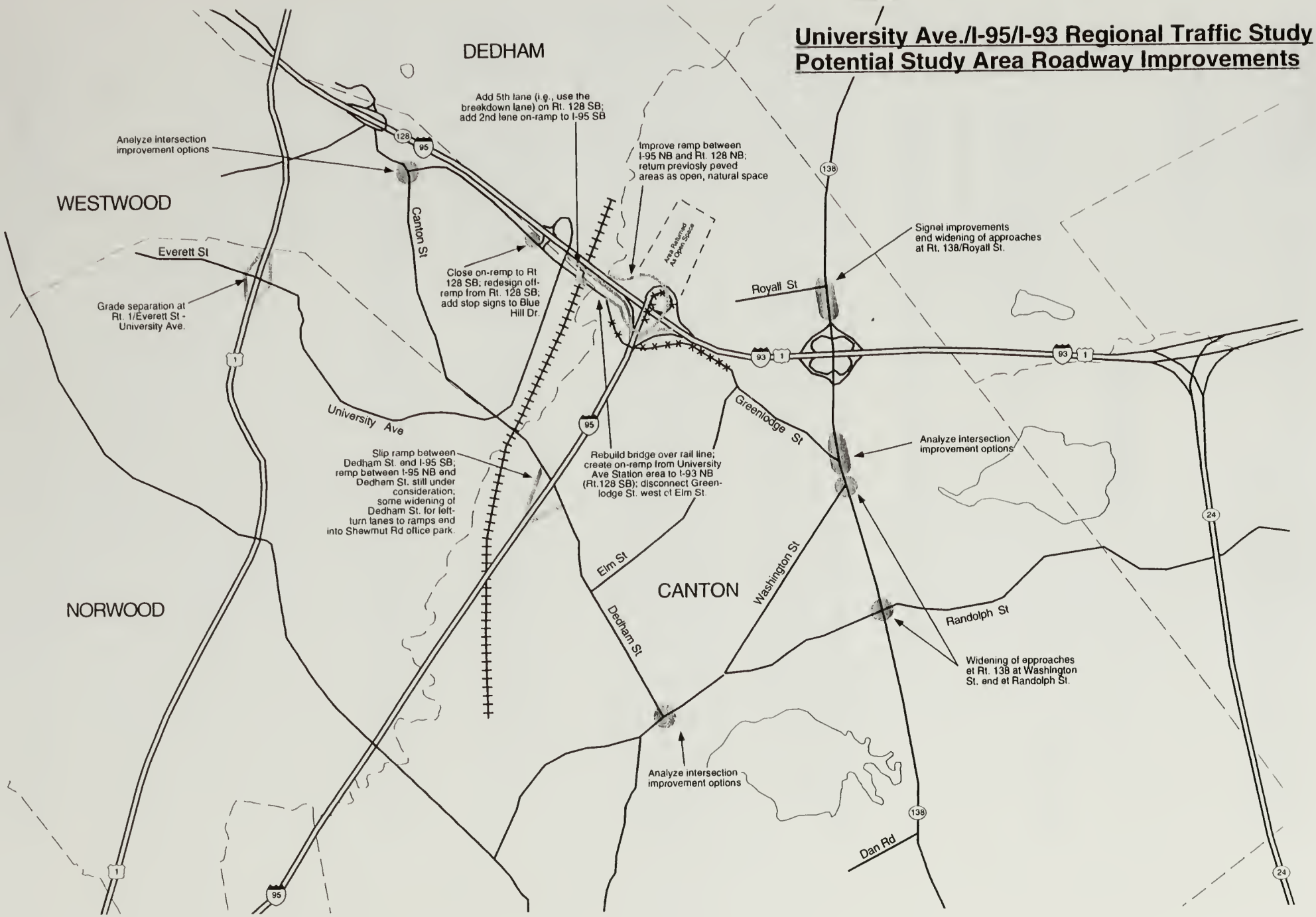
- Long-Range Elements Under Consideration:

| | |
|---|---|
| -- Off-ramp from I-95 NB to Dedham Street | $1,000,000 |
| -- 2nd lane on ramp between I-95 NB and I-93 NB | $1,000,000 |

Other Intersections
-- Analyze improvement options for additional intersections for year 2020 failure conditions:
(Dedham St / Washington St; Canton St / Blue Hill Dr; Route 138 / Greenlodge St)

(7 April, 1998)

# University Ave./I-95/I-93 Regional Traffic Study
# Potential Study Area Roadway Improvements


DEDHAM
WESTWOOD
NORWOOD
CANTON
Add 5th lane (i.e., use the breakdown lane) on Rt. 128 SB; add 2nd lane on-ramp to I-95 SB
Analyze intersection improvement options
Improve ramp between I-95 NB and Rt. 128 NB; return previosly paved areas as open, natural space
Area Returned As Open Space
Signal improvements and widening of approaches at Rt. 138/Royall St.
Everett St
Canton St
Close on-ramp to Rt 128 SB; redesign off-ramp from Rt. 128 SB; add stop signs to Blue Hill Dr.
Grade separation at Rt. 1/Everett St - University Ave.
Royall St
University Ave
Greenlodge St
Slip ramp between Dedham St. and I-95 SB; ramp between I-95 NB and Dedham St. still under consideration; some widening of Dedham St. for left-turn lanes to ramps and into Shewmut Rd office park.
Rebuild bridge over rail line; create on-ramp from University Ave Station area to I-93 NB (Rt.128 SB); disconnect Greenlodge St. west of Elm St.
Analyze intersection improvement options
Elm St
Washington St
Dedham St
Randolph St
Widening of approaches at Rt. 138 at Washington St. and at Randolph St.
Analyze intersection improvement options
Dan Rd
128
95
138
93
1
24

# [APPENDIX C-2]

## MEMORANDUM

**TO:** **University Avenue / I-95 / I-93**
**Regional Traffic Study Task Force**

**7 April, 1998**

**FROM:** **Robert Sievert**

**RE:** **Recommended Potential Study Area Roadway Improvements**

The attached information describes recommendations with respect to potential study area roadway improvements. The recommendations were generally presented at last month's Task Force meeting as the outcome of the evaluation process, and have since that time undergone further engineering and feasibility analysis by MassHighway highway design staff.

The first attachment allocates each recommended improvement element into a short-range or long-range category, while also listing a general cost estimate for each element. There is also a third category, which groups those long-range elements which are not recommended at this time, but which are still under consideration. Only one element falls in the short-range category (on-ramp from Dedham Street to I-95 SB), while the remaining improvement elements are of the long-range variety.

Please keep in mind that two other roadway improvements have been assumed to be in place throughout the analysis in any of the future year Build scenarios: intersection improvements at University Avenue / Blue Hill Drive; and, a fourth general purpose travel lane on Route 128 (I-95 / I-93).

The second attachment is a map of the entire study area and depicts the general location of each improvement element recommended. The improvements are descriptive only and are not to scale.

RES/res

UNIVERSITY AVE / I-95 / ROUTE 128 REGIONAL TRAFFIC STUDY
Improvement Elements Recommended for Implementation

- Short-Range Recommendations:

| | Estimated Cost |
|---|---|
| -- On-ramp from Dedham Street to I-95 SB | $800,000 |
| **Short-Range Total:** | **$800,000** |

- Long-Range Recommendations:

| | |
|---|---|
| -- Channelization on Dedham St near I-95 ramps and at Shawmut Rd; rebuild bridge over Neponset River for truck traffic | $1,000,000 |
| -- 5th lane on Route 128 SB between Blue Hill Drive and I-95 / 2nd lane on ramp between Route 128 SB and I-95 SB | $2,000,000 |
| -- Fly-over ramp from I-95 NB to Route 128 NB | $13,000,000 |
| -- Greenlodge Street Bridge over railroad tracks | $800,000 |
| -- Close On-ramp from Blue Hill Drive to Route 128 SB / Add On-ramp from Greenlodge Street to Route 128 SB | $5,000,000 |
| -- Greenlodge St *closed* west of Elm Street | $5,000 |
| -- Stop signs for Blue Hill Drive traffic east and west of Route 128 SB off-ramp; improve alignment of off-ramp | $300,000 |
| -- Route 1 / Everett Street improvements | $9,000,000 |
| -- Route 138 / Royall Street intersection improvements | *(Reebok improvements)* |
| -- Widening of Route 138 north and south of Washington St | *(Reebok improvements)* |
| -- Widening of all approaches at Randolph Street intersection | *(Reebok improvements)* |
| **Long-Range Total:** | **$31,100,000** |

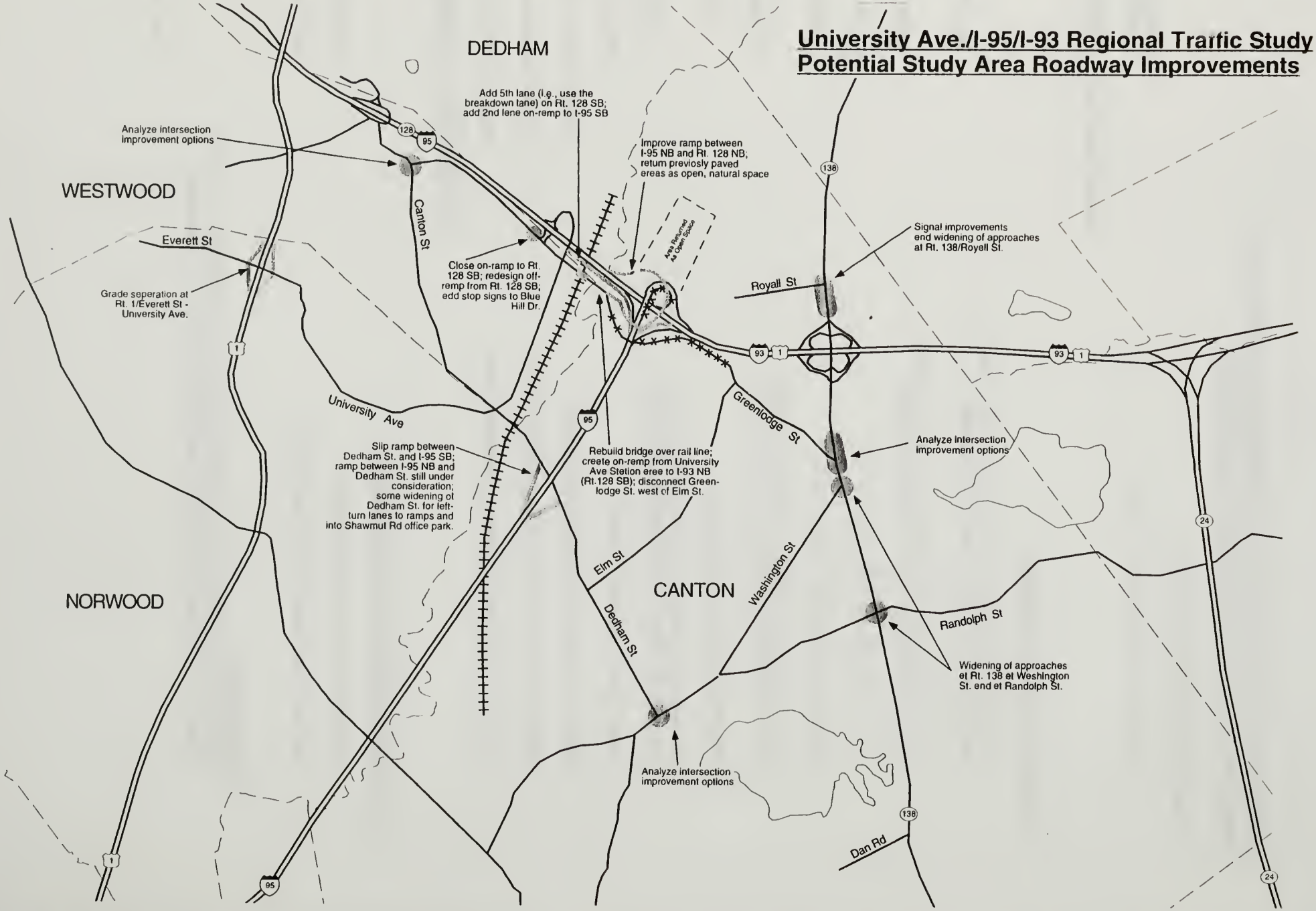
- Long-Range Elements Under Consideration:

| | |
|---|---|
| -- Off-ramp from I-95 NB to Dedham Street | $1,000,000 |
| -- 2nd lane on ramp between I-95 NB and I-93 NB | $1,000,000 |

Other Intersections
-- Analyze improvement options for additional intersections for year 2020 failure conditions:
(Dedham St / Washington St; Canton St / Blue Hill Dr; Route 138 / Greenlodge St)

(7 April, 1998)

# University Ave./I-95/I-93 Regional Traffic Study
## Potential Study Area Roadway Improvements


DEDHAM
WESTWOOD
NORWOOD
CANTON
Add 5th lane (i.e., use the breakdown lane) on Rt. 128 SB; add 2nd lene on-remp to I-95 SB
Analyze intersection improvement options
Improve ramp between I-95 NB and Rt. 128 NB; return previosly paved ereas as open, natural space
Area Returned As Open Space
Signal improvements end widening of approaches at Rt. 138/Royall St.
Canton St
Everett St
Close on-ramp to Rt. 128 SB; redesign off-remp from Rt. 128 SB; edd stop signs to Blue Hill Dr.
Grade seperation at Rt. 1/Everett St - University Ave.
Royall St
University Ave
Greenlodge St
Slip ramp between Dedham St. and I-95 SB; ramp between I-95 NB and Dedham St. still under consideration; some widening of Dedham St. for left-turn lanes to ramps and into Shawmut Rd office park.
Rebuild bridge over rail line; creete on-remp from University Ave Stetion eree to I-93 NB (Rt.128 SB); disconnect Green-lodge St. west of Elm St.
Analyze intersection improvement options
Elm St
Washington St
Dedham St
Randolph St
Widening of approaches et Rt. 138 et Weshington St. end et Randolph St.
Analyze intersection improvement options
Dan Rd
128
95
138
93
1
24

## UNIVERSITY AVE / I-95 / I-93 REGIONAL TRAFFIC STUDY

### Evaluation of Improvement Alternatives: Groupings of Elements by Function

| | EVALUATION CRITERIA | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1. Traffic Congestion | 2. Overall Safety | 3. Access, Circulation | 4. Neighbor-hood Impact | 5. Envir'l Impact | 6. Economic Development | 7. Estimated Cost (In $000) | TOTAL SCORE |
| (ELEMENT 17) -- **Close Ponkapoag / I-93 (Rt 128) interchange** | 0 | 0 | (–) | 0 | 0 | 0 | 20 | (–) |
| (ELEMENT 21) -- **Prohibit E-W traffic on Canton St at University Ave** | (–) | 0 | (–) | 0 | 0 | 0 | N/A | (–) |
| (ELEMENT 3) -- **Route 1 / Everett Street improvements** | + | + | + | + | + | + | 8-10 M | + |
| (ELEMENT 4) -- **Construction of an East-West road between Route 138 and Pleasant St** | Currently being analyzed by VHB for the Town of Canton; see DEIR -- EOEA #10704, 02-97 | | | | | | | |
| **Route 138 improvements** | | | | | | | | |
| (ELEMENT 6a) -- Traffic signal at Greenlodge Street Intersection | (–) | + | 0 | 0 | 0 | 0 | 150 | 0 |
| (ELEMENT 6b) -- Widening of Route 138 between Washington Street and Route 128 | Included as a part of Reebok's Off-site Roadway Improvements | | | | | | | + |
| (ELEMENT 18) -- Widening of all approaches at Randolph Street Intersection | Included as a part of Reebok's Off-site Roadway Improvements | | | | | | | + |
| **Access to / from Royall Street** | | | | | | | | |
| (ELEMENT 2) -- Route 138 / Royall Street Intersection Improvements | Included as a part of Reebok's Preferred Site Access Plan | | | | | | | + |
| (ELEMENT 8a, 12) -- Connection (On-ramp) from Royall Street to I-95 SB | N/A | *FAIL* | N/A | N/A | N/A | N/A | 1 M | *FAIL* |
| (ELEMENT 8b) -- Connection (On-ramp) from Royall Street to Route 128 NB | N/A | *FAIL* | N/A | N/A | N/A | N/A | 1.5 M | *FAIL* |
| (ELEMENT 8c) -- Connection (Off-ramp) from I-95 NB to Royall Street | 0 | (–) | + | (–) | (–) | + | 1.5 M | 0 |
| (ELEMENT 12) -- Connection between Greenlodge Street and Royall Street via the "Unused" Bridge over Route 128 | 0 | 0 | + | 0 | (–) | 0 | 2 M | 0 |
| (ELEMENT -- ) -- **Other Intersections** | Analyze improvement options for additional intersections for year 2020 failure conditions:<br>o Dedham St / Washington St (AM, PM)<br>o Canton St / Blue Hill Dr (PM)<br>o Route 138 / Greenlodge Street (AM, PM) | | | | | | | + |

(Robert Sievert, CTPS, 980309, EvTabAl4.xls)

## Evaluation of Improvement Alternatives: Groupings of Elements by Function (cont.)

(Robert Sievert, CTPS, 980309, EvTabAl4.xls)

| | EVALUATION CRITERIA | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1. Traffic Congestion | 2. Overall Safety | 3. Access, Circulation | 4. Neighbor-hood Impact | 5. Envir'l Impact | 6. Economic Development | 7. Estimated Cost (in $000) | TOTAL SCORE |
| **University Ave / Station area access to/from the South** | | | | | | | | |
| o Dedham Street / I-95 slip ramps | | | | | | | | |
| (ELEMENT 5a) -- On-ramp to I-95 SB ONLY | + | + | + | + | + | + | 300-500 | + |
| (ELEMENT 5b) -- On-ramp to I-95 SB / Off-ramp from I-95 NB | + | + | + | + | + | + | 800-1.2 M | + |
| (ELEMENT 5c) -- On-ramp to I-95 NB / Off-ramp from I-95 SB | + | (−) | + | 0 | 0 | + | 800-1.2 M | 0 |
| (ELEMENT 5d) -- Channelization on Dedham St between Kirby Dr and University Ave | + | + | + | 0 | 0 | + | 500-1 M | + |
| o Greenlodge Street / I-95 slip ramps | | | | | | | | |
| (ELEMENT 11) -- On-ramp to I-95 SB / Off-ramp from I-95 NB | N/A | ***FAIL*** | N/A | N/A | N/A | N/A | 600-1 M | ***FAIL*** |
| (ELEMENT 12) -- On-ramp to I-95 SB via "Unused" Bridge over Rt 128 / Off-ramp from I-95 NB | N/A | ***FAIL*** | N/A | N/A | N/A | N/A | 600-1 M | ***FAIL*** |
| o Route 128 / I-95 interchange improvements | | | | | | | | |
| (ELEMENT 1) -- 5th lane on Route 128 SB between Blue Hill Drive and I-95 / 2nd lane on ramp between Route 128 SB and I-95 SB | + | + | 0 | 0 | 0 | 0 | 1.5-2 M | + |
| (ELEMENT 15) -- Fly-over ramp from I-95 NB to Route 128 NB | + | + | 0 | 0 | 0 | 0 | 10-15 M | + |
| (ELEMENT 9) -- Complete rebuilding of I-95 / I-93 interchange (a la Route 24) | N/A | N/A | N/A | N/A | ***FAIL*** | N/A | 25 M | ***FAIL*** |
| o (ELEMENT 7) -- Neponset St widening between I-95 and Route 1 | + | 0 | 0 | (−) | 0 | 0 | 1.3 M | (−) |
| **University Ave / Station area access to/from the East** | | | | | | | | |
| (ELEMENT 10) -- Greenlodge Street Bridge over railroad tracks | 0 | 0 | + | (−) | 0 | 0 | 600-800 | 0 |
| *(NOTE: Elements 19, 20, and 22 include a rebuilt Greenlodge Street Bridge)* | | | | | | | | |
| (ELEMENT 19) -- End Greenlodge Street Bridge at station, not at University Avenue | + | 0 | (−) | 0 | 0 | (−) | N/A | (−) |
| (ELEMENT 20) -- Prohibit E-W through traffic on Blue Hill Drive at University Ave | 0 | 0 | (−) | 0 | 0 | (−) | N/A | (−) |
| (ELEMENT 22) -- Close On-ramp from Blue Hill Drive to Route 128 SB / / Add On-ramp from Greenlodge Street to I-93 NB (route 128 SB) | + | + | 0 | 0 | 0 | 0 | 2-5 M | + |
| (ELEMENT 13) -- Greenlodge Street one-way WB west of Elm Street | 0 | 0 | (−) | 0 | 0 | (−) | 10 | (−) |
| (ELEMENT 14) -- Greenlodge Street closed west of Elm Street | 0 | 0 | (−) | + | 0 | (−) | 5 | (−) |
| **University Ave / Station area access to/from the West** | | | | | | | | |
| (ELEMENT -- ) -- Stop signs for Blue Hill Drive traffic west of Route 128 SB ramps | + | + | (−) | 0 | 0 | 0 | 200-300 | + |
| (ELEMENT 16) -- Cul-de-sac on Blue Hill Drive west of Route 128 SB ramps | N/A | ***FAIL*** | N/A | N/A | N/A | N/A | 100-200 | ***FAIL*** |
| (ELEMENT -- ) -- Move Route 128 SB / Blue Hill Drive ramps westward (to improve weave) | + | + | 0 | (−) | 0 | 0 | 500-750 | + |

# [APPENDIX C-3]

## MEMORANDUM

**TO:** **University Avenue / I-95 / I-93 Regional Traffic Study Task Force** **12 May, 1998**

**FROM:** **Robert Sievert**

**RE:** **Traffic Volumes: 1995 Base Year; 2005 With Dedham Street to I-95 SB Slip Ramp Only; 2020 "Preferred Alternative"**

Attached are 14 maps that show Base and Future Year traffic volumes for the project study area. The first seven maps depict the AM peak hour, while the latter seven show the PM peak hour. Volumes for each of the two peak hours are displayed according to the following categories:

Existing
- 1995 Balanced Counts

Short range
- 2005 No-Build assignment volumes
- 2005 assignment volumes with Dedham Street to I-95 SB slip ramp only (Dedham Street WB left turns **not** permitted)
- 2005 assignment volumes with Dedham Street to I-95 SB slip ramp only (Dedham Street WB left turns **are** permitted)

Long range
- 2020 No-Build assignment volumes
- 2020 assignment volumes with "Preferred Alternative" (Dedham Street WB left turns **not** permitted at I-95 SB slip ramp)
- 2020 assignment volumes with "Preferred Alternative" (Dedham Street WB left turns **are** permitted at SB slip ramp)

An analysis of the results show that, in general, traffic stays on the highways longer with the implementation of the various roadway improvements on I-95 and I-93. By adding slip ramps between Dedham Street and I-95, traffic that previously travelled through the various neighborhoods now remains longer on I-95. By improving connections between I-95 and I-93, and adding a new on-ramp from the University Avenue/Station area while closing the existing on-ramp from Blue Hill Drive to Route 128 SB, a highway weaving area is eliminated, less

traffic passes through the University Avenue/Blue Hill Drive intersection, and overall safety is enhanced.

However, although improved traffic operations are realized in a number of locations, one area in particular would realize increased traffic levels: Dedham Street, in the section east of University Avenue and west of Elm Street. This is the area in the immediate vicinity of the I-95 slip ramps, and it is predominantly non-residential in nature. In order for this section of Dedham Street to be able to handle increased traffic volumes, the area would likely be subject to roadway improvements such as traffic signal(s), widening, exclusive left-turn lanes. The range of specific improvements needed would have to be investigated separately from this study.

Following are key results from an analysis of the traffic volumes on the attached maps:

- 2005 AM Peak Hour, Dedham Street to I-95 SB slip ramp only:
  - -- 90 vehicles on slip ramp (Dedham Street WB left turns not permitted)
  - -- 120 vehicles on slip ramp (Dedham Street WB left turns permitted)
  - -- reduced traffic at Dedham Street/Washington Street area
  - -- reduced traffic entering Route 128 SB from Blue Hill Drive (30-40 vehicles)
  - -- increased traffic on Dedham Street between University Avenue and I-95 slip ramp area (60-70 vehicles)

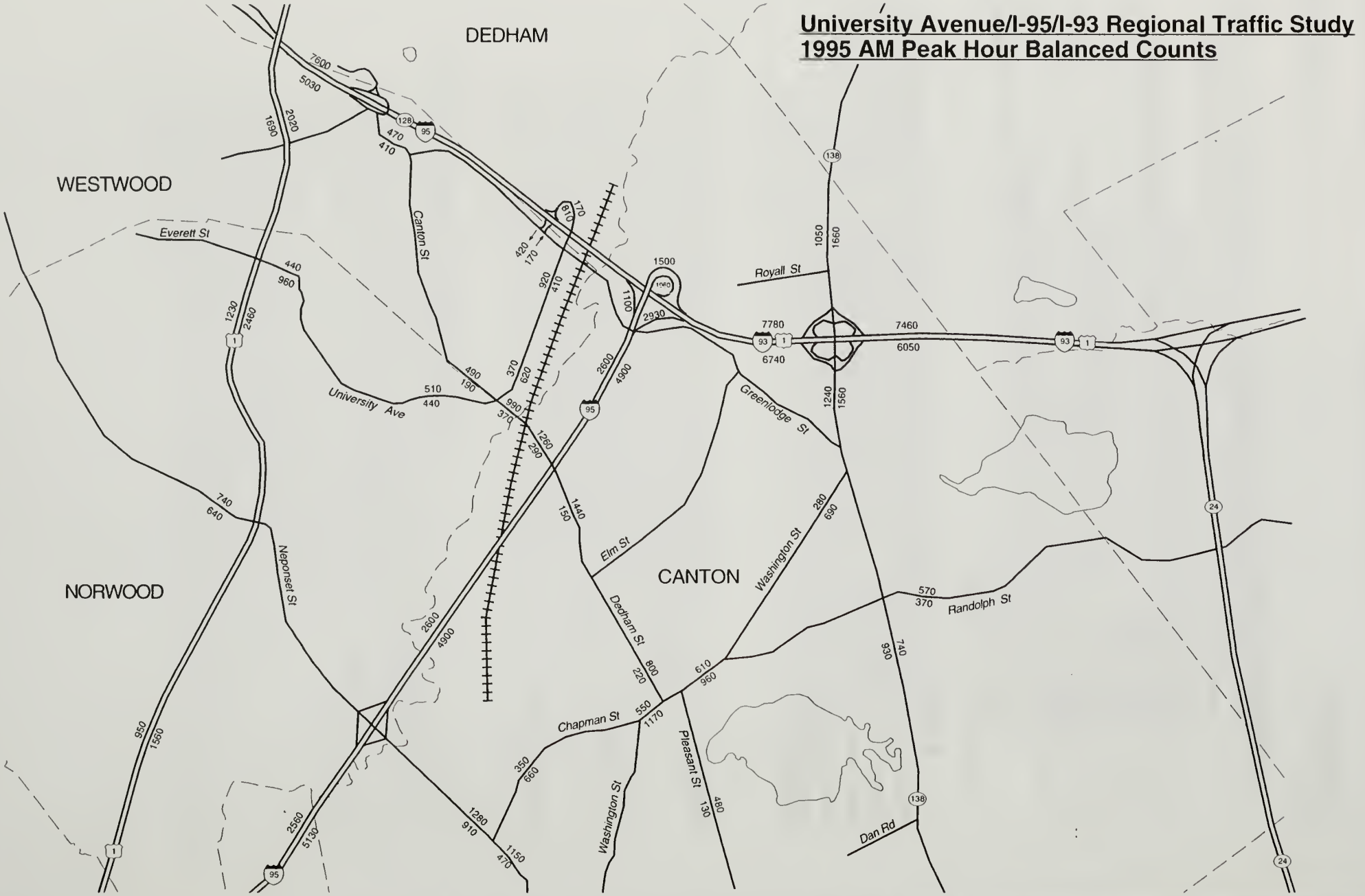
- 2005 PM Peak Hour, Dedham Street to I-95 SB slip ramp only:
  - -- 330 vehicles on slip ramp (Dedham Street WB left turns not permitted)
  - -- 580 vehicles on slip ramp (Dedham Street WB left turns permitted)
  - -- reduced traffic at Dedham Street/Washington Street area
  - -- reduced traffic entering Route 128 SB from Blue Hill Drive (170-190 vehicles)
  - -- reduced traffic at University Avenue/Blue Hill Drive intersection
  - -- reduced traffic at Route 1/Everett Street intersection
  - -- increased traffic on Dedham Street between University Avenue and I-95 slip ramp area (220-270 vehicles)

- 2020 AM Peak Hour, "Preferred Alternative":
  - -- 110 vehicles on Dedham Street to I-95 SB slip ramp (WB left turns not permitted)
  - -- 180 vehicles on Dedham Street to I-95 SB slip ramp (WB left turns permitted)
  - -- 620-690 vehicles on I-95 NB to Dedham Street slip ramp
  - -- 140 vehicles on University Avenue to I-93 NB ramp (using a rebuilt Greenlodge Street Bridge)
  - -- reduced traffic at Dedham Street/Washington Street area
  - -- reduced traffic at University Avenue/Blue Hill Drive intersection
  - -- reduced traffic at Route 1/Everett Street
  - -- increased traffic at University Avenue/Dedham Street intersection
  - -- increased traffic on Dedham Street between University Avenue and I-95 slip ramp area (320-330 vehicles)

- 2020 PM Peak Hour, "Preferred Alternative":
  - -- 600 vehicles on Dedham Street to I-95 SB slip ramp (WB left turns not permitted)
  - -- 880 vehicles on Dedham Street to I-95 SB slip ramp (WB left turns permitted)
  - -- 100-150 vehicles on I-95 NB to Dedham Street slip ramp
  - -- 1250 vehicles on University Avenue to I-93 NB ramp (using a rebuilt Greenlodge Street Bridge)
  - -- reduced traffic at Dedham Street/Washington Street area
  - -- reduced traffic at University Avenue/Blue Hill Drive intersection
  - -- reduced traffic at Route 1/Everett Street
  - -- increased traffic at University Avenue/Dedham Street intersection
  - -- increased traffic on Dedham Street between University Avenue and I-95 slip ramp area (420-510 vehicles)

It should also be mentioned that special analysis was done to determine potential "cut-through" traffic from Route 128 SB, exiting at East Street, and using Canton Street and Dedham Street to turn south onto the I-95 SB slip ramp. Assignments were run for both the AM and PM peak hours, for both the 2005 (slip ramp only) and 2020 ("Preferred Alternative") scenarios. It was found that, in all cases, *no vehicles used this path in order to bypass the I-95/I-93 interchange*.

RES/res


University Avenue/I-95/I-93 Regional Traffic Study
1995 AM Peak Hour Balanced Counts
DEDHAM
WESTWOOD
NORWOOD
CANTON
Everett St
Canton St
University Ave
Neponset St
Elm St
Washington St
Dedham St
Greenlodge St
Royall St
Chapman St
Pleasant St
Randolph St
Dan Rd
7600
5030
1690
2020
470
410
810
170
420
170
920
410
1500
1560
1100
2930
1050
1660
7780
6740
7460
6050
1240
1560
440
960
1230
2460
490
190
370
620
510
440
990
370
2600
4900
1260
290
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740
640
950
1550
2560
5150
1280
910
1150
470
350
660
550
1170
220
800
610
960
280
690
570
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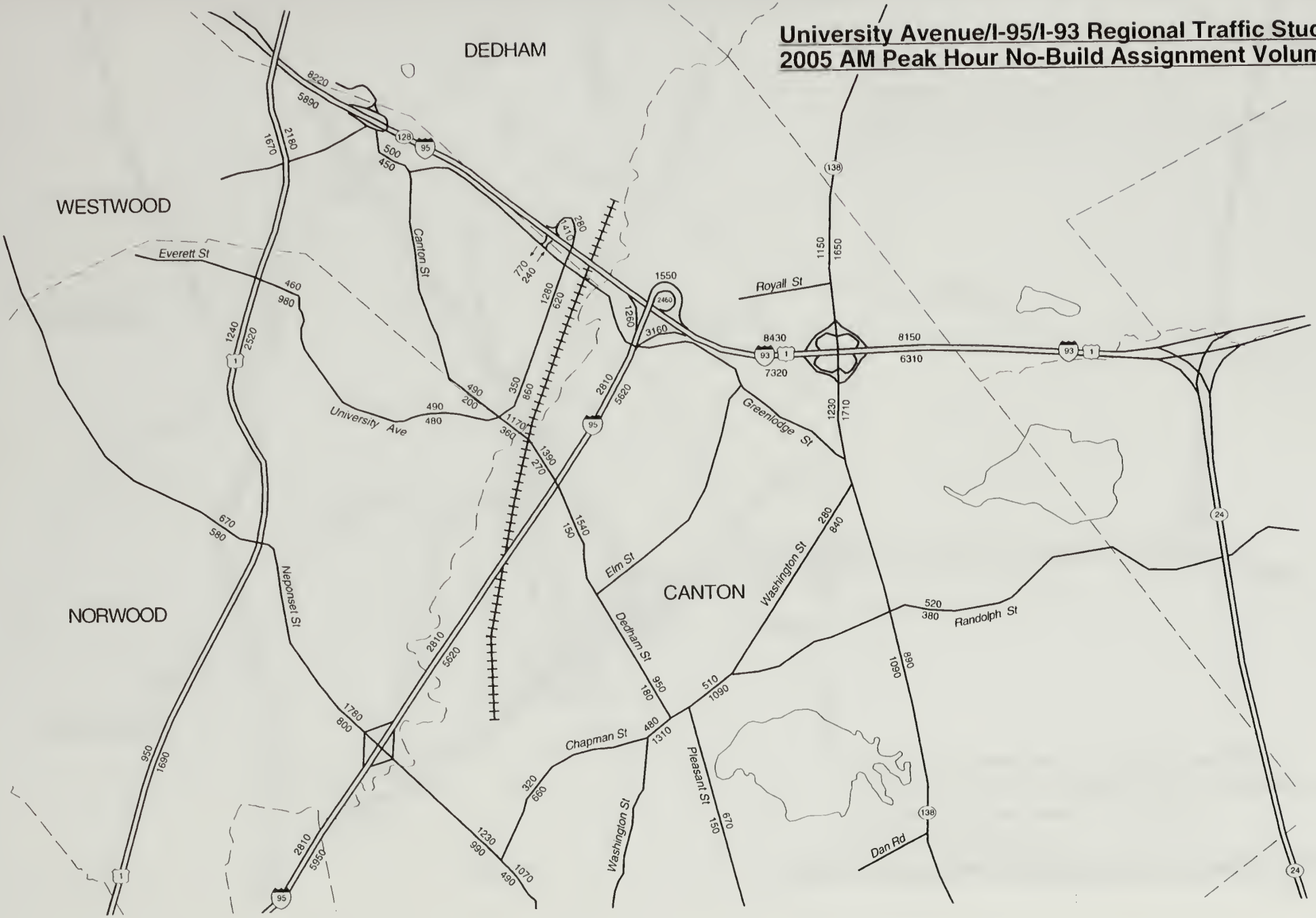
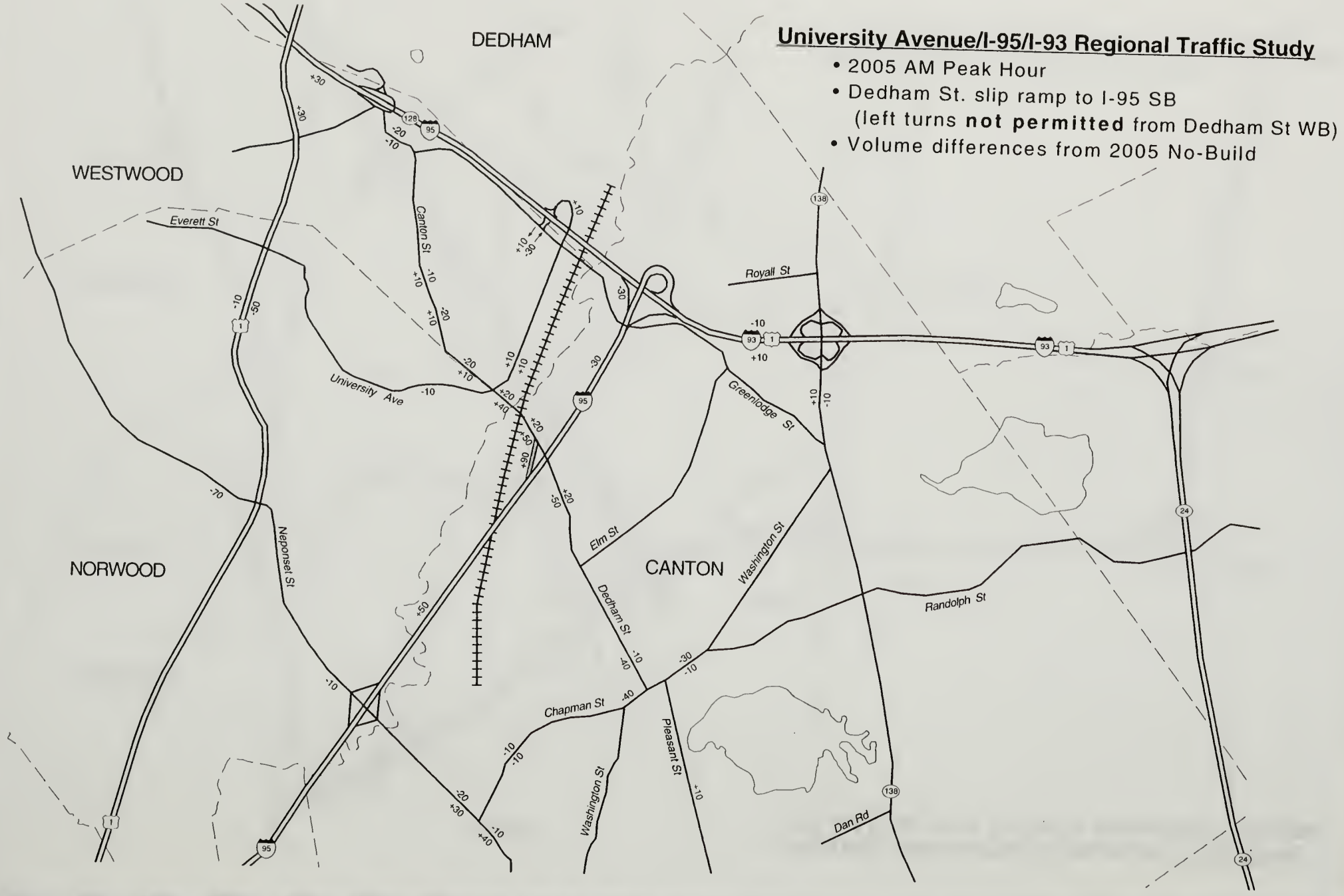
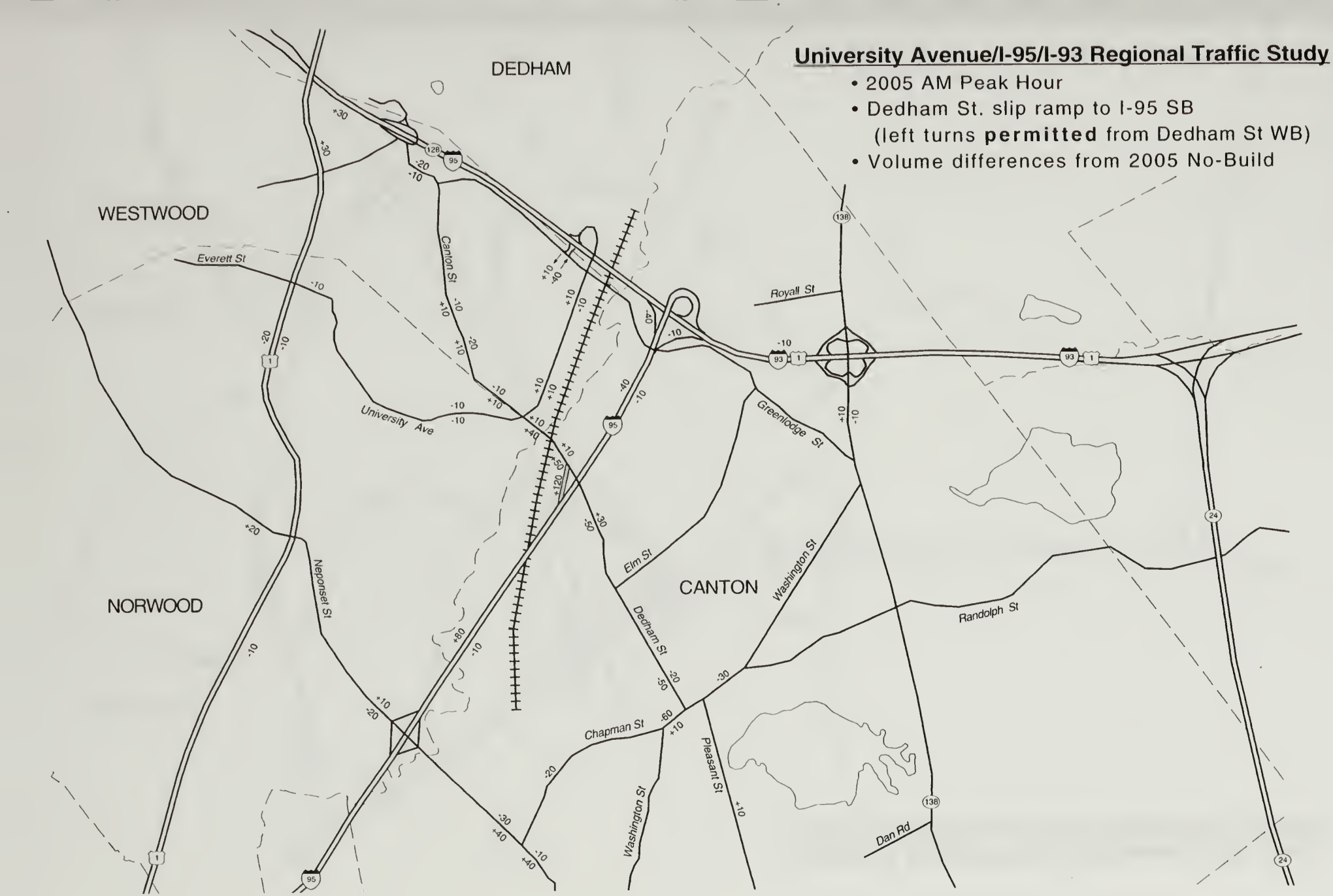
1

# University Avenue/I-95/I-93 Regional Traffic Study
# 2005 AM Peak Hour No-Build Assignment Volumes




University Avenue/I-95/I-93 Regional Traffic Study
• 2005 AM Peak Hour
• Dedham St. slip ramp to I-95 SB
(left turns **not permitted** from Dedham St WB)
• Volume differences from 2005 No-Build
DEDHAM
WESTWOOD
NORWOOD
CANTON
Everett St
Canton St
University Ave
Neponset St
Elm St
Dedham St
Chapman St
Washington St
Pleasant St
Dan Rd
Royall St
Greenlodge St
Washington St
Randolph St
128
95
93
138
24
1


University Avenue/I-95/I-93 Regional Traffic Study
• 2005 AM Peak Hour
• Dedham St. slip ramp to I-95 SB
(left turns **permitted** from Dedham St WB)
• Volume differences from 2005 No-Build
DEDHAM
WESTWOOD
NORWOOD
CANTON
Everett St
Canton St
University Ave
Neponset St
Elm St
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Dan Rd
128
95
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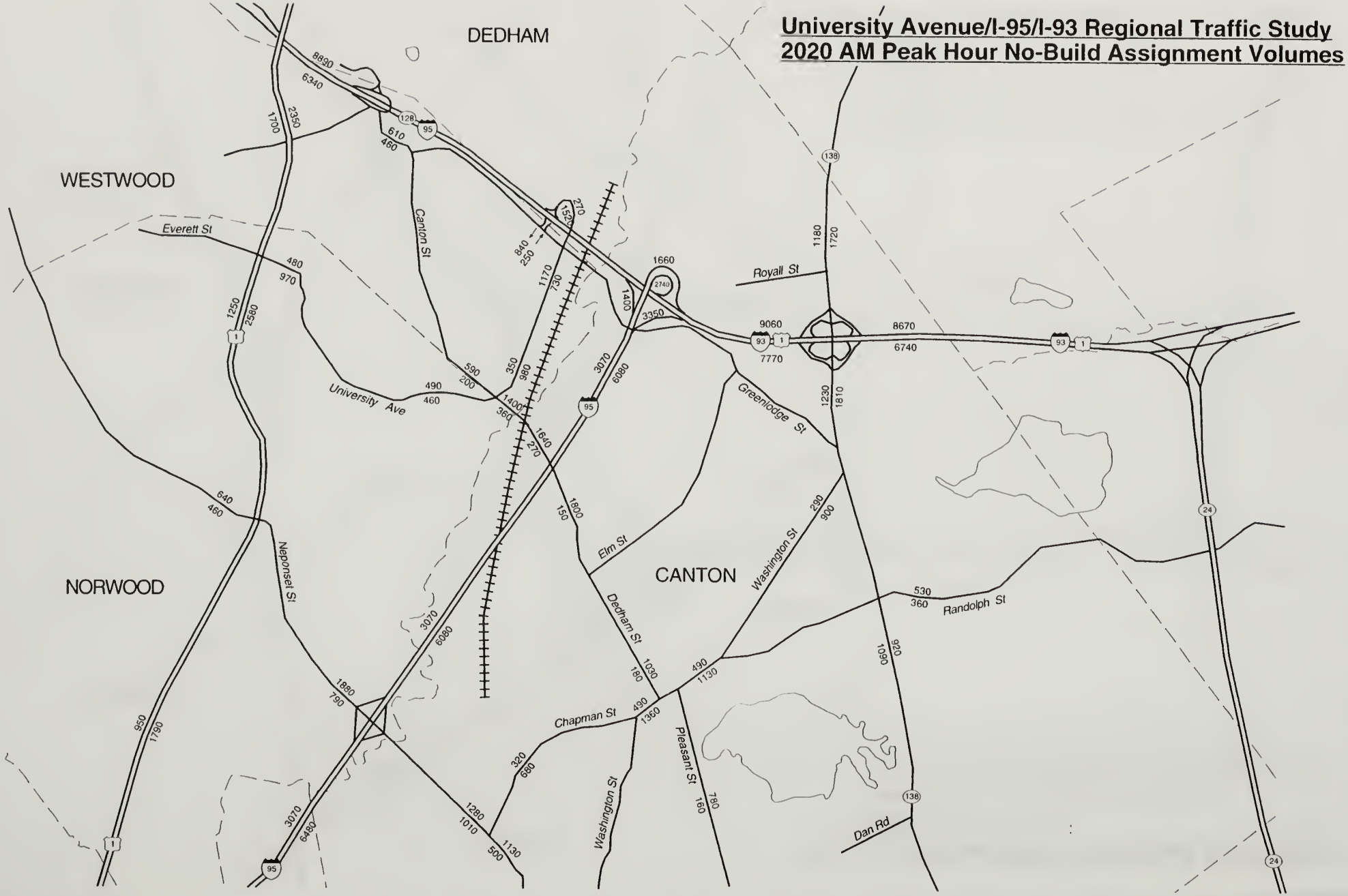
University Avenue/I-95/I-93 Regional Traffic Study
2020 AM Peak Hour No-Build Assignment Volumes
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WESTWOOD
NORWOOD
CANTON
Everett St
Canton St
University Ave
Neponset St
Elm St
Dedham St
Washington St
Greenlodge St
Royall St
Chapman St
Pleasant St
Randolph St
Dan Rd
8890
6340
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610
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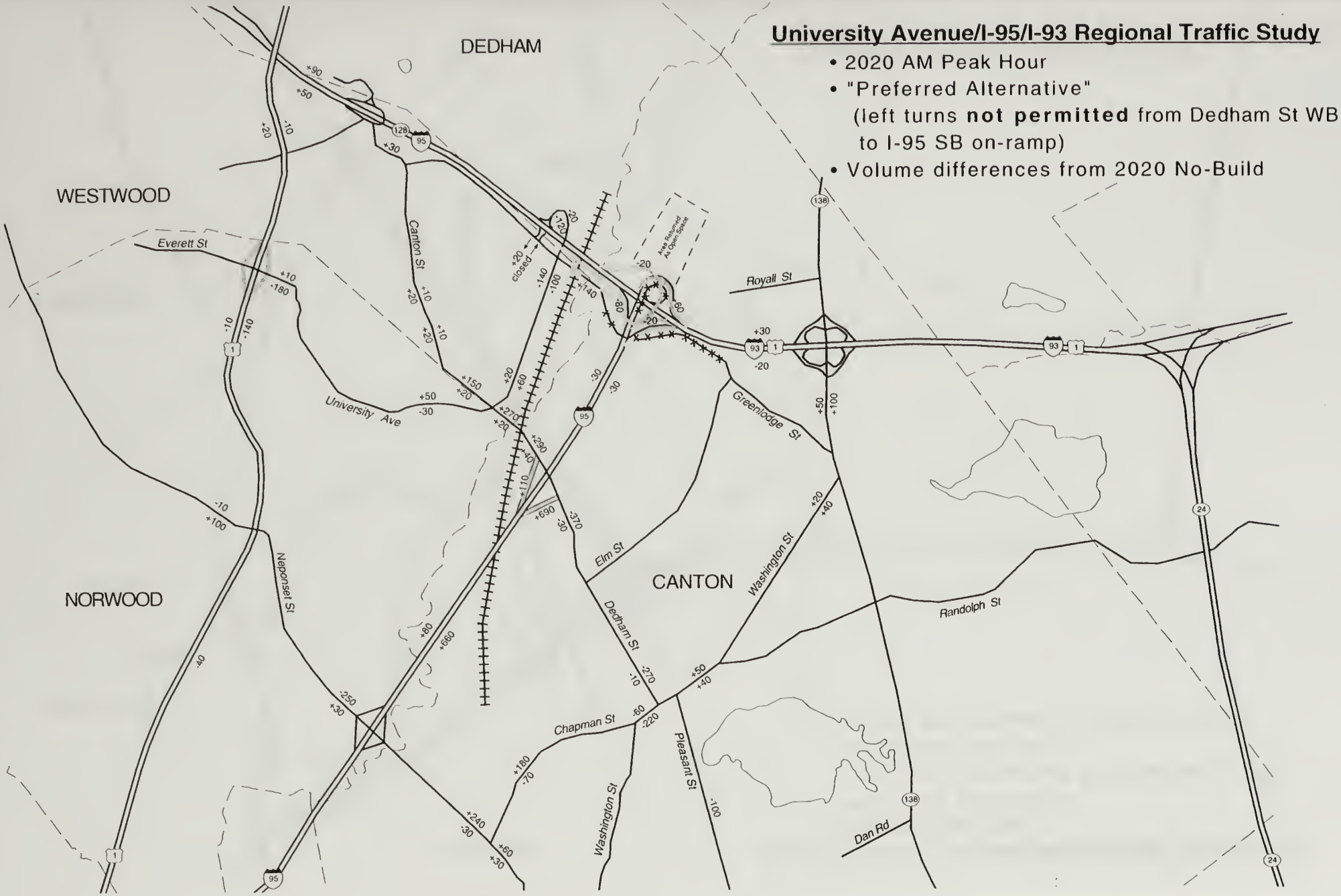
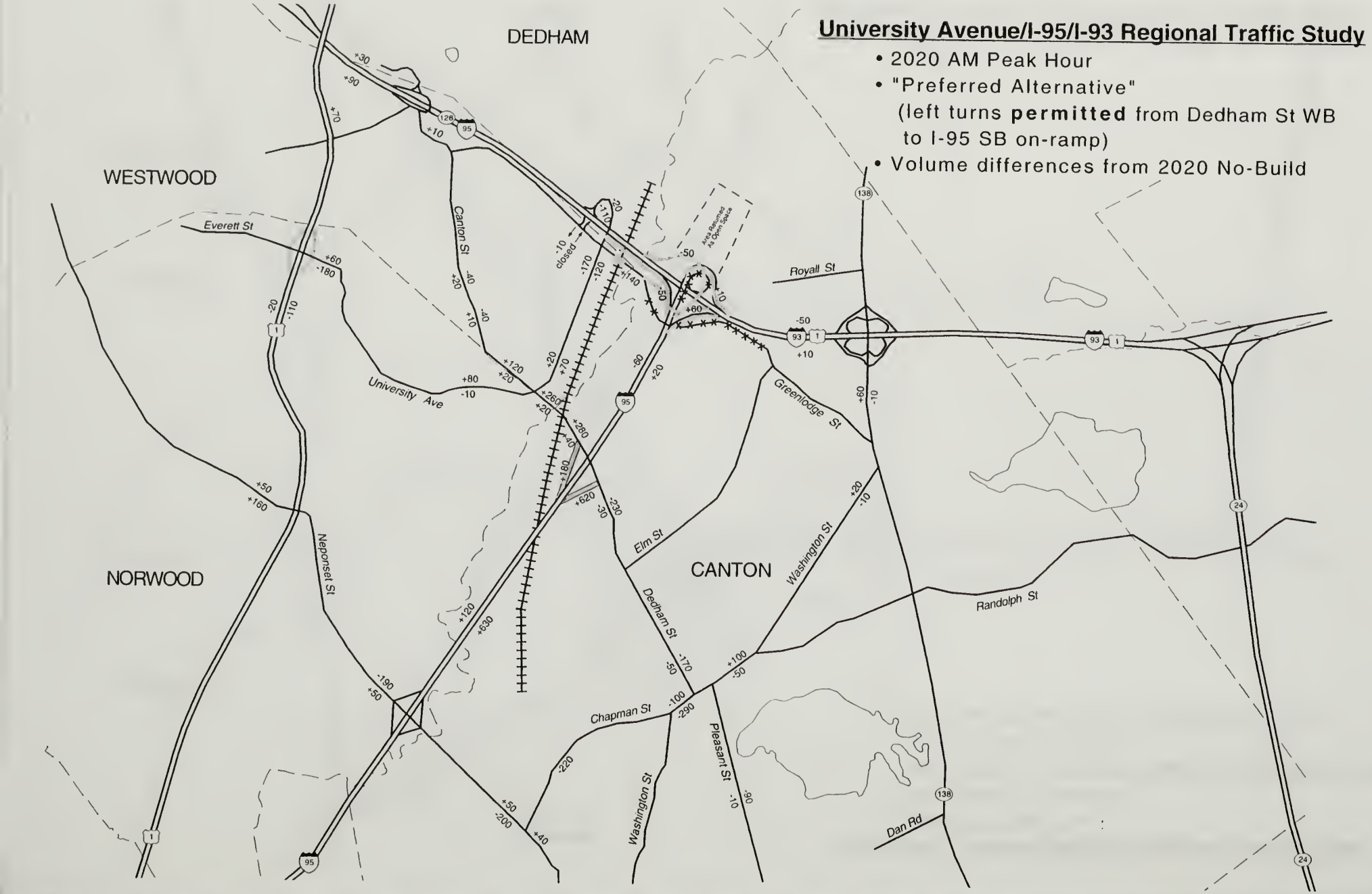
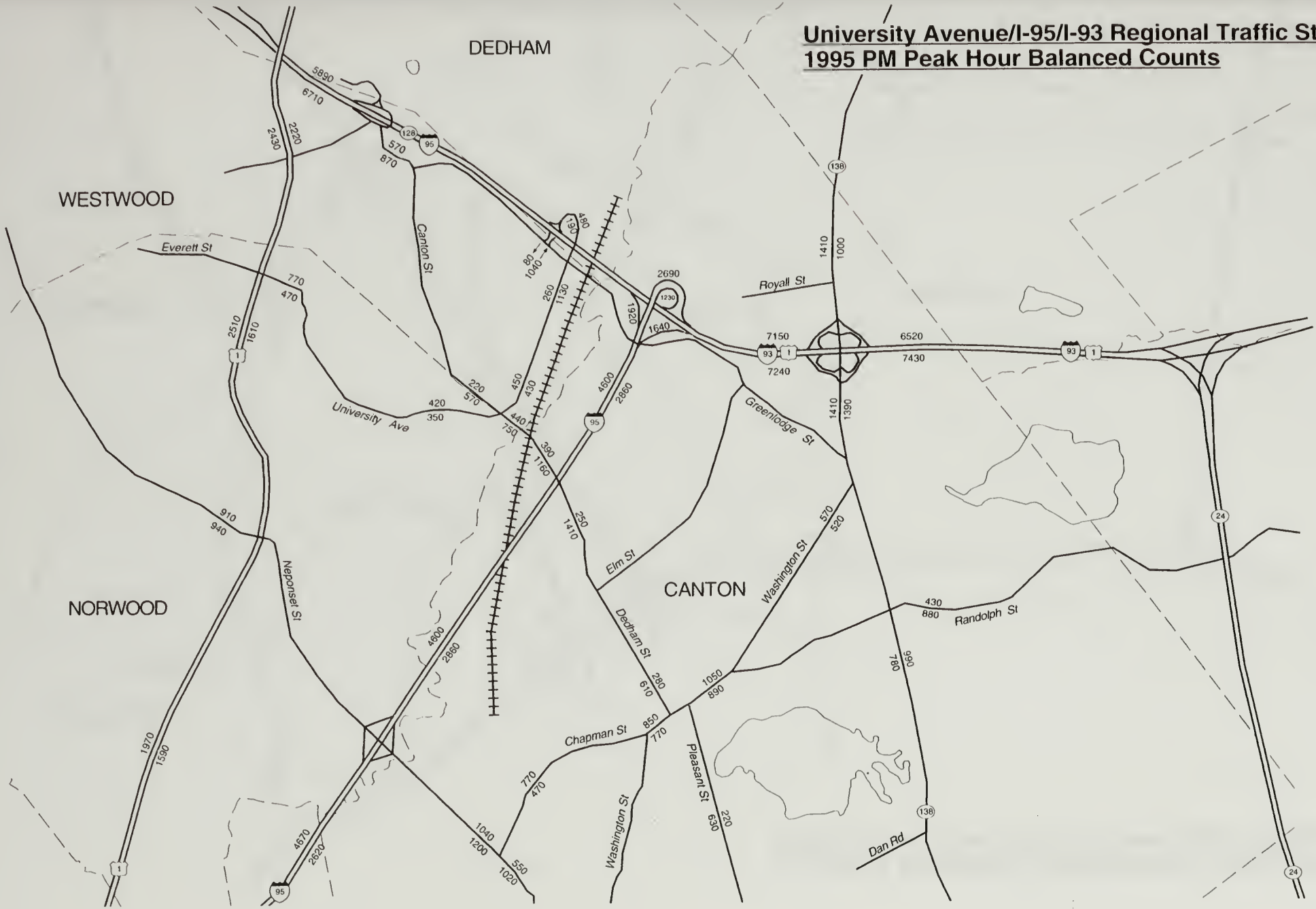
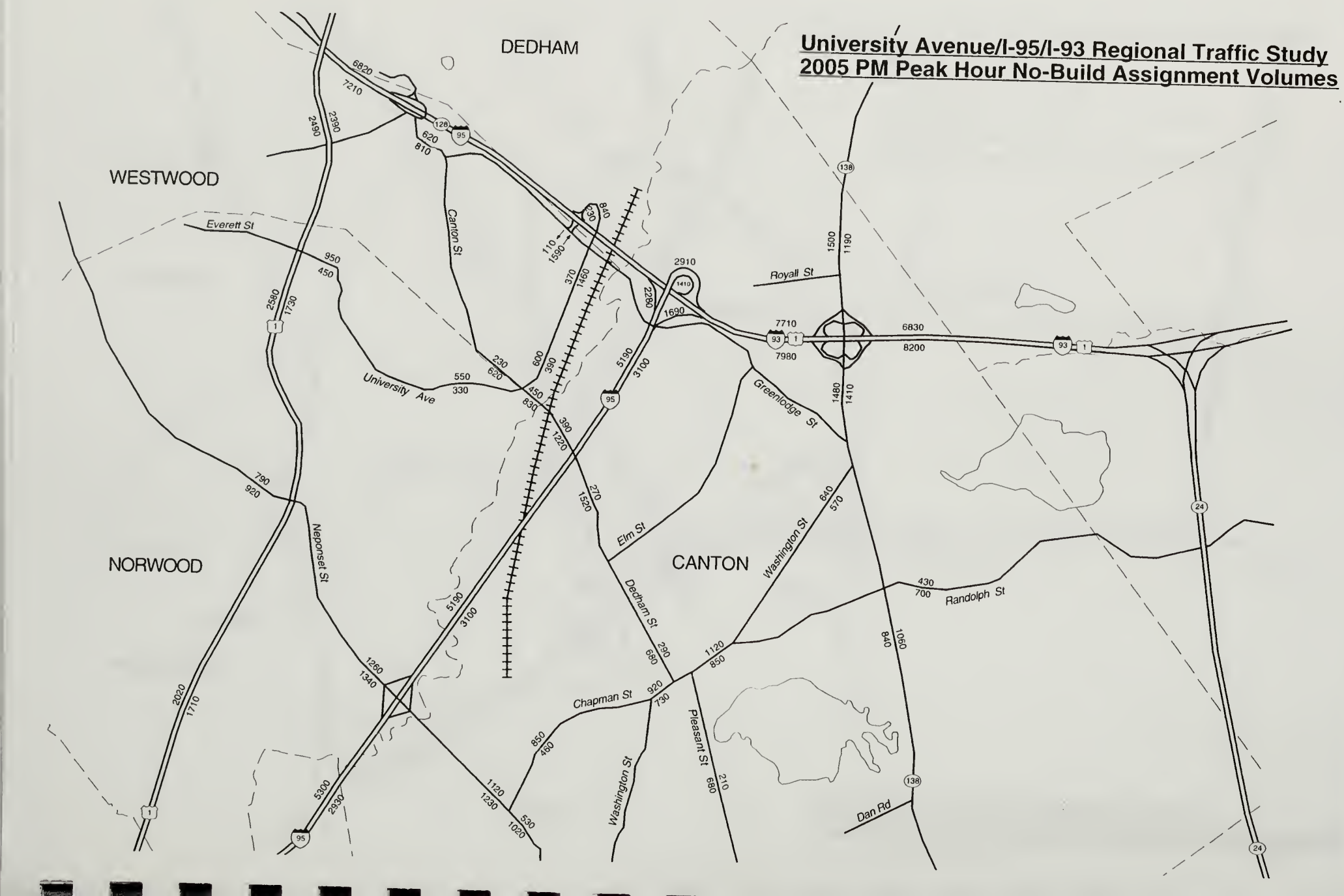
24


University Avenue/I-95/I-93 Regional Traffic Study
• 2020 AM Peak Hour
• "Preferred Alternative"
(left turns **not permitted** from Dedham St WB to I-95 SB on-ramp)
• Volume differences from 2020 No-Build
DEDHAM
WESTWOOD
NORWOOD
CANTON
Everett St
Canton St
University Ave
Neponset St
Elm St
Dedham St
Washington St
Greenlodge St
Royall St
Randolph St
Chapman St
Pleasant St
Dan Rd
Area Returned As Open Space
closed


University Avenue/I-95/I-93 Regional Traffic Study
• 2020 AM Peak Hour
• "Preferred Alternative"
(left turns **permitted** from Dedham St WB to I-95 SB on-ramp)
• Volume differences from 2020 No-Build
DEDHAM
WESTWOOD
NORWOOD
CANTON
Everett St
Canton St
University Ave
Neponset St
Elm St
Dedham St
Washington St
Chapman St
Pleasant St
Royall St
Greenlodge St
Randolph St
Dan Rd
Area Rezoned As Open Space
closed

# University Avenue/I-95/I-93 Regional Traffic Study
## 1995 PM Peak Hour Balanced Counts




University Avenue/I-95/I-93 Regional Traffic Study
2005 PM Peak Hour No-Build Assignment Volumes
DEDHAM
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Everett St
University Ave
Canton St
Neponset St
Elm St
Dedham St
Washington St
Chapman St
Pleasant St
Royall St
Greenlodge St
Randolph St
Dan Rd
6820
7210
2490
2390
620
810
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110
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2910
1410
370
1460
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1690
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1190
7710
7980
6830
8200
950
450
2580
1730
230
620
600
390
550
330
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830
5190
3100
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640
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1120
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1060
840
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730
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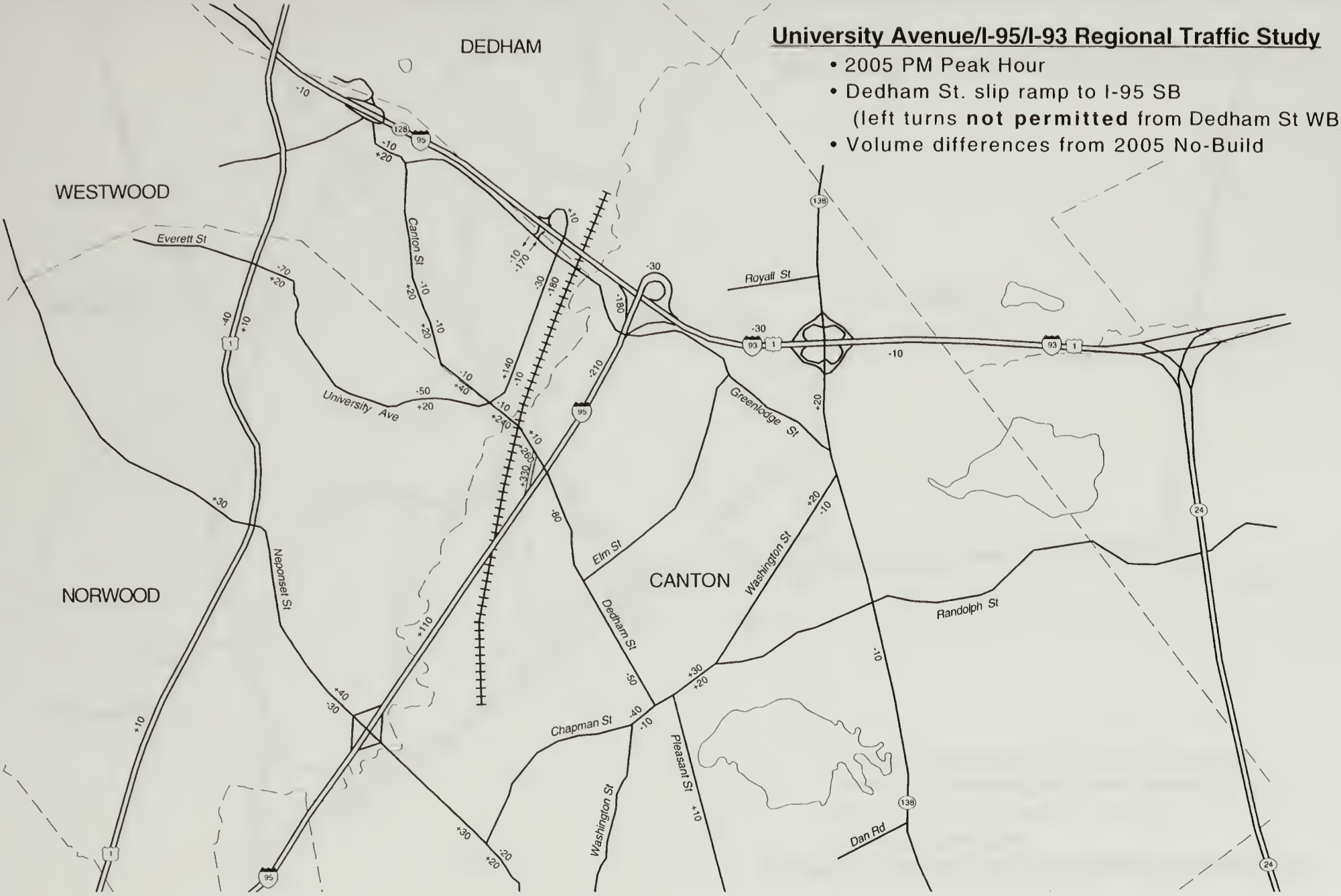
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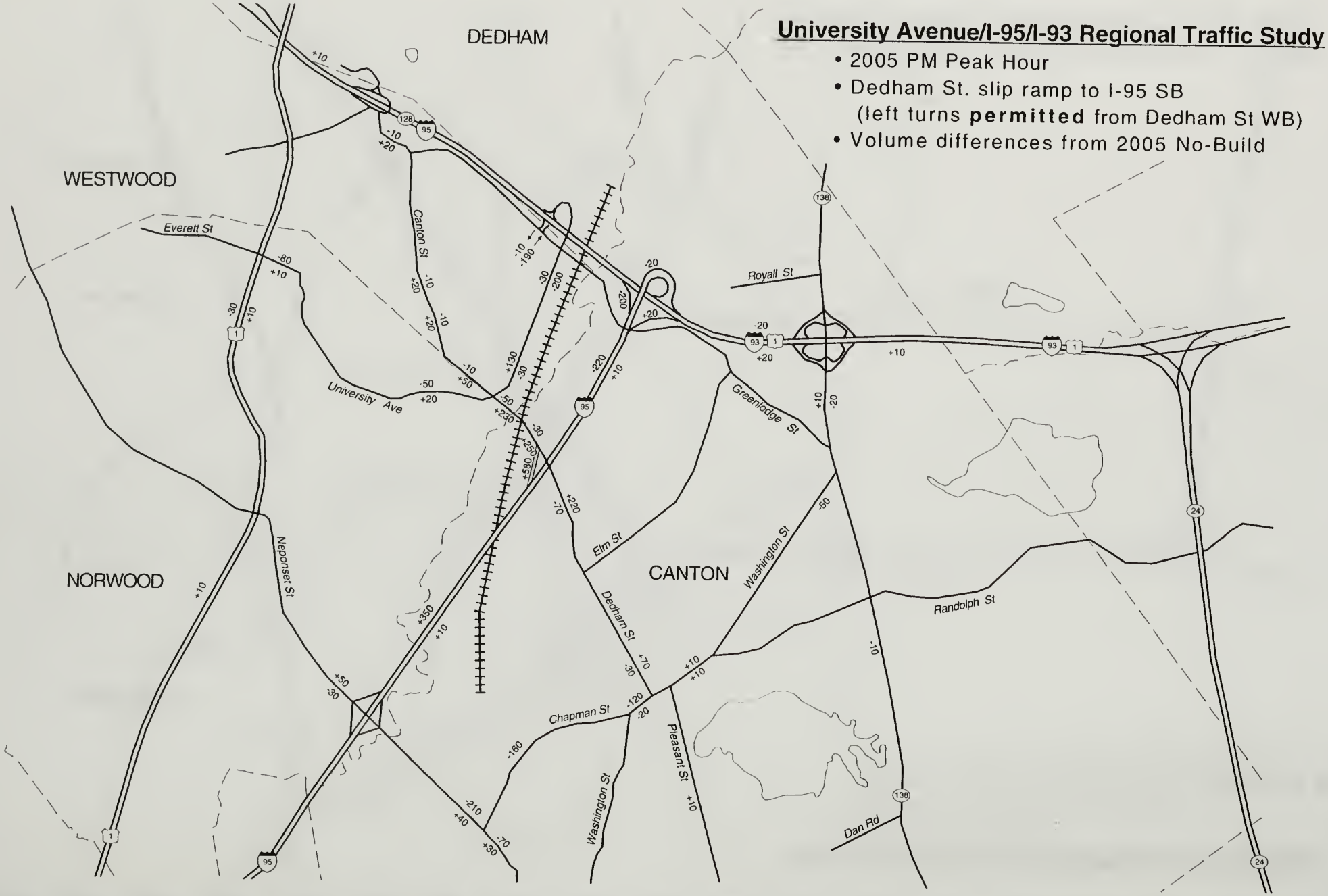
Randolph St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Chapman St
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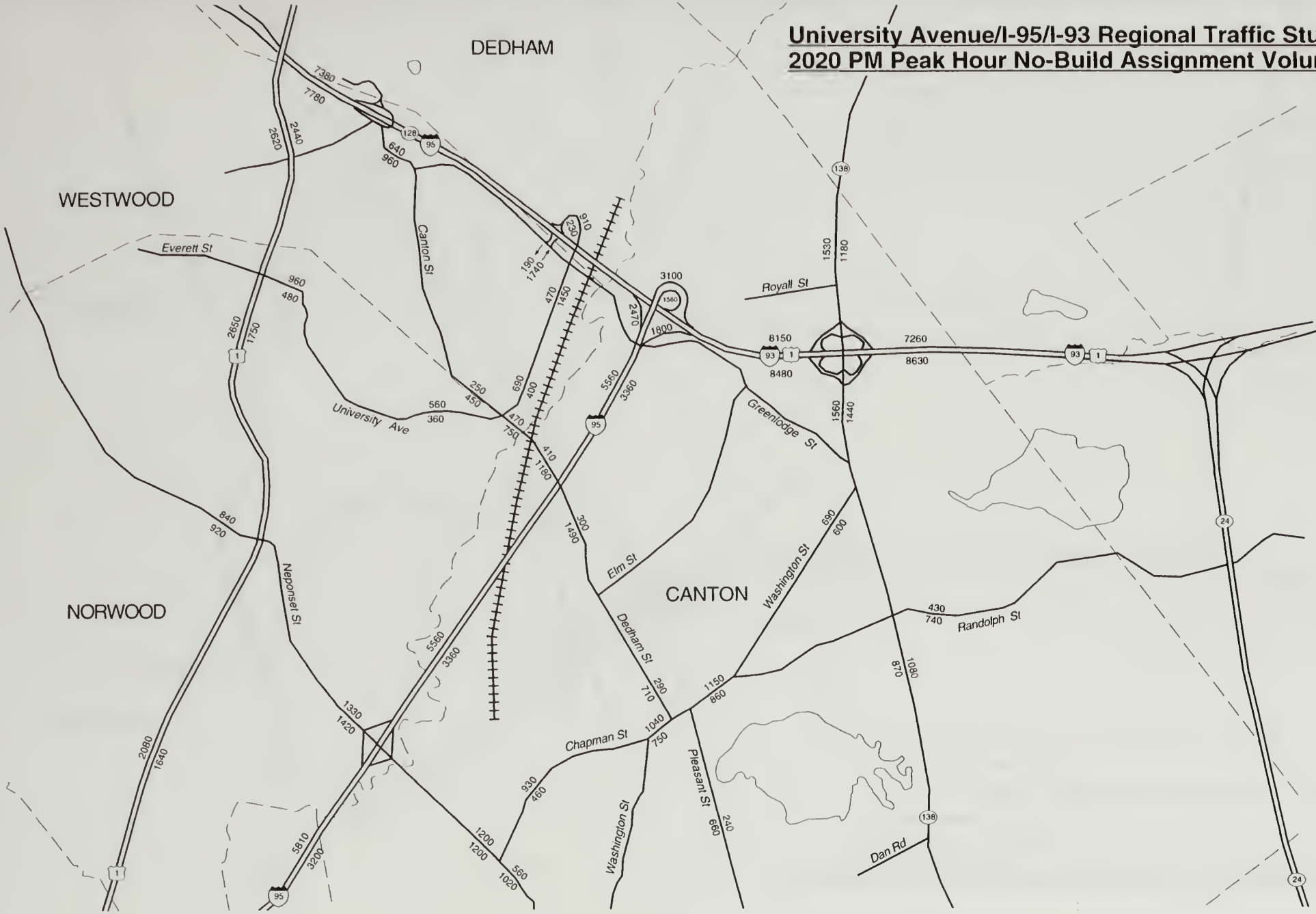
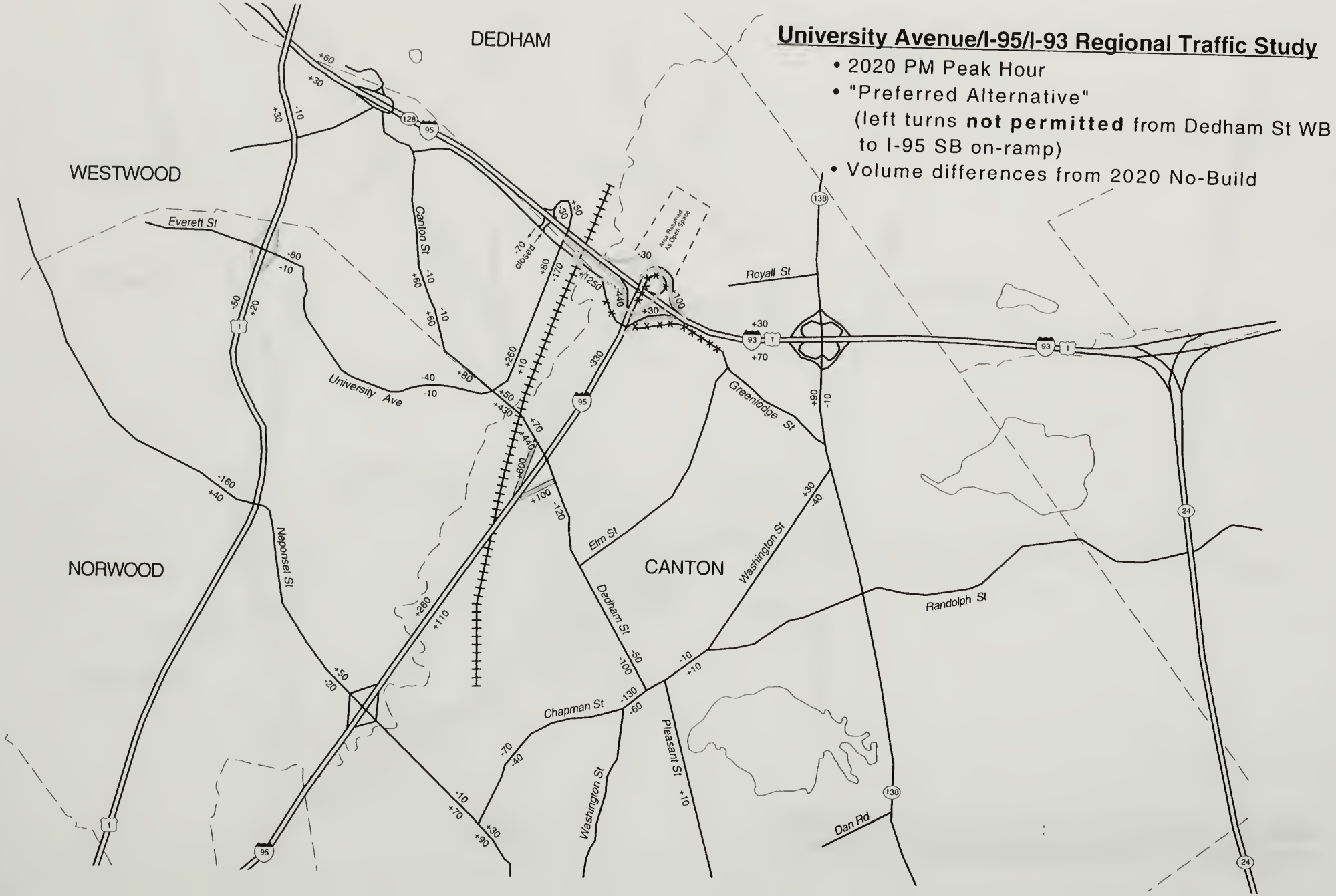
Pleasant St
Dan Rd

# University Avenue/I-95/I-93 Regional Traffic Study
# 2020 PM Peak Hour No-Build Assignment Volumes




University Avenue/I-95/I-93 Regional Traffic Study
• 2020 PM Peak Hour
• "Preferred Alternative"
(left turns **not permitted** from Dedham St WB to I-95 SB on-ramp)
• Volume differences from 2020 No-Build
DEDHAM
WESTWOOD
NORWOOD
CANTON
Everett St
Canton St
University Ave
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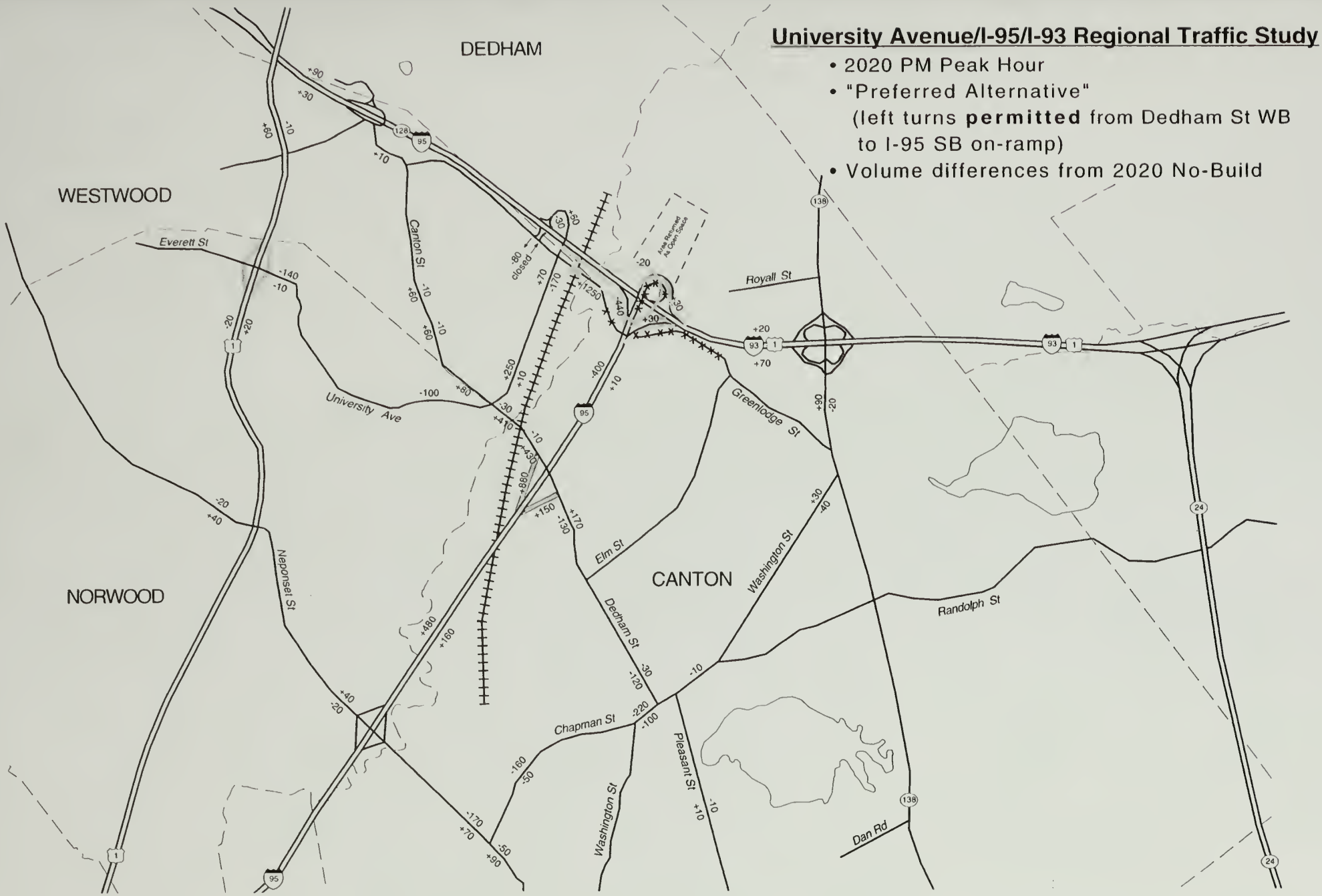
Elm St
Dedham St
Chapman St
Washington St
Pleasant St
Greenlodge St
Royall St
Randolph St
Dan Rd
Area Returned As Open Space
closed


University Avenue/I-95/I-93 Regional Traffic Study
• 2020 PM Peak Hour
• "Preferred Alternative"
(left turns **permitted** from Dedham St WB to I-95 SB on-ramp)
• Volume differences from 2020 No-Build
DEDHAM
WESTWOOD
NORWOOD
CANTON
Everett St
Canton St
University Ave
Neponset St
Elm St
Dedham St
Chapman St
Washington St
Pleasant St
Dan Rd
Royall St
Greenlodge St
Washington St
Randolph St
Area Reclaimed As Open Space
closed

## APPENDIX D

**Traffic Management: Canton Street, Westwood**
(Technical memorandum)

# [APPENDIX D]

## MEMORANDUM

**TO:** Ken Miller, MassHighway-BTP & D — June 30, 1998

**FOR:** University Avenue/I-95/I-93
Regional Traffic Study Task Force

**FROM:** Efi Pagitsas and Robert Sievert

**RE:** Traffic Management Measures for Canton Street in Westwood

At the May 27, 1998 public meeting in Westwood regarding the recommendations of the University Avenue/I-95/I-93 Regional Traffic Study, Canton Street area residents expressed concerns about the proposed southbound I-95 on-ramp at Dedham Street in Canton. Although our analysis for the Regional Traffic Study does not support this, it is these residents' fear that the ramp could attract cut-through traffic along Canton Street by commuters wishing to bypass the I-95/I-93 interchange. In these residents' perception, commuters, instead of using the Route 128/University Avenue interchange or the Route 128/I-95/I-93 interchange, would exit Route 128 at East Street and follow Canton Street to reach employment sites along Canton Street, University Avenue and Dedham Street, and even I-95 southbound locations.

The purpose of this memo is to briefly describe the available traffic management measures and indicate those which appear to be promising for Canton Street. The aim of these treatments would be to make the Route 128/East Street Exit/Canton Street less attractive for cut-through traffic, while preserving its function as a local, residential collector street.

### Residential Traffic Management Measures

Residential traffic management can reduce speed and through traffic volumes in neighborhoods by applying an assortment of physical and legal (regulatory and enforcement) treatments within the limits of the roadway. The intention of these treatments is to reduce speed and, therefore, increase travel times through the residential neighborhood thus making the cut through routes less attractive. Description of some of the most common geometric features for neighborhood traffic control follows:

Speed Humps - These are raised areas in the roadway pavement surface designed appropriately to create vertical constraints on speed. They are placed at uniform intervals

along the road ranging from 80 to 130 meters. Small reductions in traffic volumes have been reported from this measure.

Speed Tables (raised intersections) - These are features similar to speed humps but they are constructed with a table or flat portion which can also be used as a pedestrian crosswalk. In addition to mid-block locations, speed tables can be applied at intersections.

Roundabouts - Depending on their size, rotaries, traffic circles, roundabouts and mini-roundabouts have several different functions. The intermediate size ones (of the order of 2.5 meters in diameter) which are appropriate for residential neighborhoods, are used as speed control devices within the intersection of two local streets. When used as a series of circles they can also have the effect of reducing traffic volumes by slowing or inconveniencing a driver's path (the figure on the following page shows graphics of a speed hump, a speed table, a traffic circle and a roundabout.)

Intersection Diverters - These applications are traffic islands designed so that certain intersection movements are prevented or become difficult to be made. Diverters can be partial (create right-in right-out movements at "T" intersections) or full diagonal ones used as a barrier across a four-way intersection to alter street network flow by converting the intersection into two unconnected streets.

Channelization - These are features such as median barriers (islands) with pedestrian refuge treatments meant to alter travel patterns between a major and minor neighborhood street. For example, if a median barrier is extended through an intersection, then all left turns and through movements on the minor street are impossible.

Street Narrowing - Another name for this treatment is chokers or bulb-outs. Their purpose is to reduce through volumes and speeds by reducing the width of the traveled way through curb modifications, channelization and often landscaping features. Another benefit of these treatments is that they reduce crosswalk distance for pedestrians wishing to cross the road.

Street closure (Cul-de-Sacs) - This is an extreme traffic management measure used traditionally in new subdivisions. The technique provides a complete barrier of a street at an intersection thus leaving a neighborhood block open to traffic from one side of the street but physically barring it from the other.

**Deployment Success on Speed and Cut-Throughs**

The common characteristic of the geometric traffic control features just described is that they physically restrict, modify or prohibit certain traffic movements. However, their results on speed and cut-through traffic reduction vary depending on the extremity of the measure and their appropriateness for the street network and traffic conditions of the specific neighborhood. For example, speed humps and speed tables are primarily used

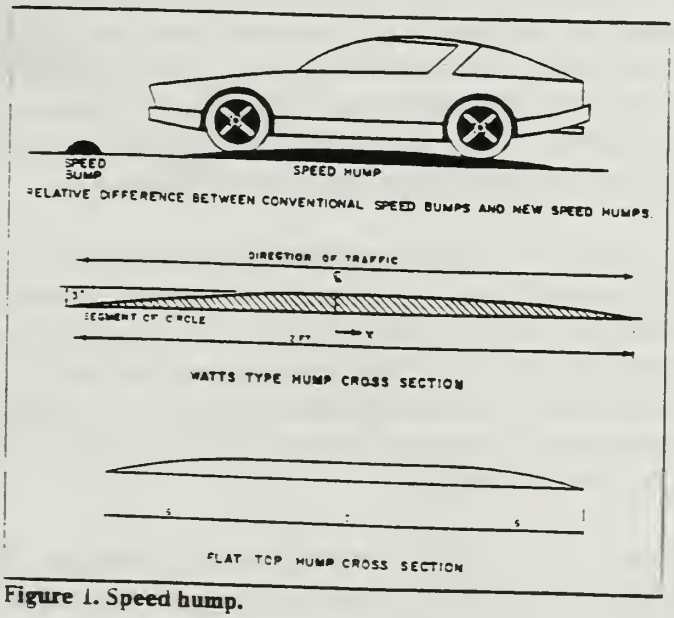

SPEED BUMP
SPEED HUMP
RELATIVE DIFFERENCE BETWEEN CONVENTIONAL SPEED BUMPS AND NEW SPEED HUMPS.
DIRECTION OF TRAFFIC
SEGMENT OF CIRCLE
WATTS TYPE HUMP CROSS SECTION
FLAT TOP HUMP CROSS SECTION

**Figure 1. Speed hump.**

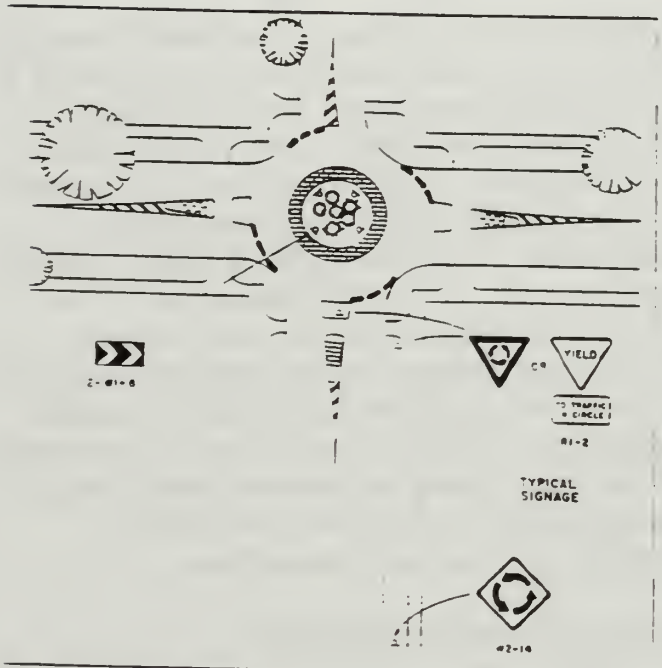



**Figure 3. Roundabout.**

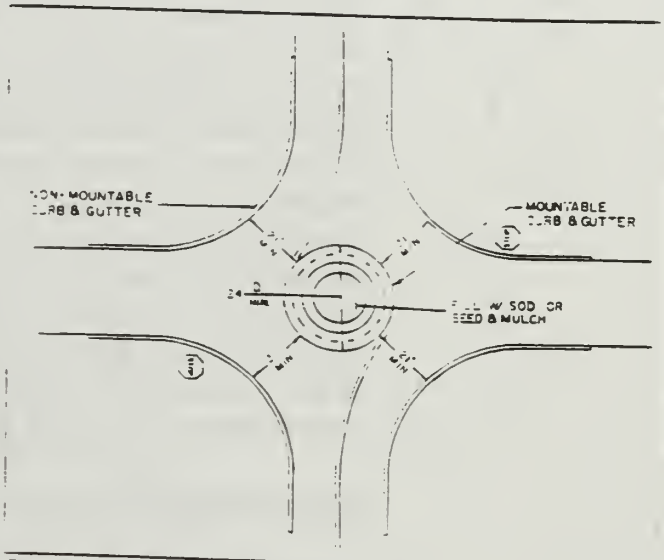



**Figure 2. Traffic circle.**

Source:
C. Edward Walter. Suburban Residential Traffic Calming, ITE Journal, September 1995

for speed control and have small effect on traffic volume reductions as a side benefit. Street narrowing can reduce traffic volumes when carried out for a considerable length of street but has insignificant effect on speed. Traffic circles are known to have both speed and traffic volume reduction effects depending on the size of the circle's diameter and the assortment of other control devices which accompany their deployment (yield signs, approach island, holding lines at the approaches etc.).

From the literature we learn that for traffic management measures to be successful they need to be installed as part of a system of measures (area-wide plan) rather than as isolated features. Such a system could be, for example, a series of circles, speed hump/tables or bulb-outs or an appropriate combination of all of the above. In addition, traffic management measures need to be deployed in conjunction of other traffic control devices such as signs, pavement markings, and reflectors to warn motorists of their presence and promote safety.

Finally, local support is critical in successful deployment. The consensus of residents, local authorities, emergency service staff and local agencies is needed for the plan to stand a good chance of working.

**Canton Street in Westwood**

Canton Street, a local urban collector road extending between the East Street Rotary Exit of Route 128 and University Avenue, is tree-lined, narrow (width seems to vary from 22 to 24 feet) and mostly residential (see map on following page.) East of University Avenue, Canton Street becomes Dedham Street in the town of Canton. Speed limit is posted at 30 and 35 mph and trucks with capacity over two and a half tons are excluded from using the road. The street, in addition to numerous driveway curb cuts, is intersected by subdivision roads forming mostly "T' type intersections with it. Only one intersection, at Everett Street and Partridge Drive, is a four way intersection. At its beginning (closer to East Street and Route 128), Canton Street serves as access to Downey Street and the Golf Course and, further southeast, to Blue Hill Drive which also connects with University Avenue. The land use at the lower one quarter of its length, near University Avenue, and at the beginning of Dedham Street in Canton is commercial. Traffic control at Canton Street with University Avenue and Dedham Street is provided by a two-phase traffic signal operated by a fixed-type controller. Green time is approximately evenly split between University Avenue and Canton Street.

**Recommendations for Canton Street Area Traffic Management**

A brief field reconnaissance along the road did not reveal significantly higher traffic speeds than those posted. For this reason, speed humps and speed tables were excluded from consideration as a primary traffic management tool and the search focused on traffic volume reducing measures instead. From the remaining tools, it appears that any features promoting street channelization or narrowing would not be effective either because

CANTON ST
BLUE HILL DRIVE
WHITEWOOD ROAD
ENDICOTT STREET
PEPPERTREE DRIVE
PALOMINO LN
PORTER STREET
PARTRIDGE DRIVE
HEMLOCK DRIVE
PERRY DRIVE
ADAMS STREET
CANTON TER
DOWNEY ST
EVERETT STREET
GONDOLA ROAD
MARYMONT AVE
CARTLEDGE STREET
YALE STREET
CRESTON AVE
OVERLOOK AVE
WESTWOOD TER
EAST ST
Traffic Circle
Speed Hump

Canton Street is already narrow with many horizontal and vertical curves on its surface which create some travel friction. Finally, intersection diverters and street closures would also not be applicable here because Canton Street's function as a collector road needs to be preserved. The one remaining traffic management treatment is the traffic circle and it is recommended here for consideration in conjunction with other measures as follows:

- Install an intermediate size (about 2.5 meters in diameter) traffic circle island at the intersections of Canton Street with Blue Hill Drive. The approaches to the circle should be reconstructed in such a way so that a vehicle's path is deflected sufficiently around the island to create the slow-down and inconvenience effect on the driver. The traffic circle will also have a psychological impact on drivers who, from a distance, will perceive it as an obstacle to traffic. Further, drivers who get discouraged from using Canton Street because of other measures further downstream from this location will also be discouraged from using Blue Hill Drive to access University Avenue. The pavement at the proposed intersection location is rather narrow but it appears that sufficient right-of-way exists to construct the proposed circle.

- Construct four speed humps between the intersections at Blue Hill Drive and Everett Street/Partridge Drive. The purpose of this series of humps is to slow down motorists who might attempt to make up time after the Blue Hill Drive circle and also, as a side effect, to further reduce traffic volume.

- Install an intermediate size traffic circle at the intersection of Canton Street with Everett Street and Partridge Drive. This treatment, located at the only four-way intersection along Canton Street, will work as a system with the circle at Blue Hill Drive by providing a negative visual and psychological perception of the circle as obstacle. Appropriate warning signs and pavement markings will have to be installed in support of safety.

- Redesign the traffic signal phases at University Avenue to apportion more green time to the Dedham Street and University Avenue approaches and less to the Canton Street approach. This treatment will discourage Route 128 motorists destined for University Avenue and Dedham Street employment sites from using Canton Street by adding delay to their travel through the intersection.

- Investigate the possibility of lowering the posted speed limit from 30 and 35 mph to 25 mph. If a speed limit reduction is warranted, with appropriate local police enforcement, it could have an effect on traffic volume reduction. A prerequisite for altering speed control anywhere in the state is a comprehensive engineering study monitored by the MassHighway District where the roadway location in question belongs.

- Remove the STOP sign from the bottom of the Route 128 southbound ramp at Blue Hill Drive so that morning ramp traffic flows unimpeded into the Drive towards University Avenue. Place a STOP sign on the Blue Hill Drive approach. This is one of

the elements of the preferred plan chosen by the Route 128/I-95/I-93 Task Force and should be one of the earliest to be implemented.

In closing, this proposed traffic management plan is preliminary and conceptual. It was developed with minimal analysis after a brief reconnaissance and from having become familiar with the general Canton Street area traffic environment through the Route 128/I-95/I-93 Regional Traffic Study. Further work will have to be done to modify, test and refine the plan with input from the town and the immediate residential neighborhood. In particular, emergency personnel, town administrators and planners will have a key role to play in balancing the needs of motorists for unimpeded travel to Westwood employment sites and the desire of Westwood's Canton Street residents for the preservation of quality of life in their neighborhood.

EP/ep

## APPENDIX E

**Comments on Draft Report (in Chronological Order), and Responses (if Warranted)**

COMMONWEALTH OF MASSACHUSETTS
MASSACHUSETTS SENATE
STATE HOUSE, BOSTON 02133-1053

SENATOR MARIAN WALSH
NORFOLK AND SUFFOLK DISTRICT
ROOM 405
TEL. (617) 722-1348

RECEIVED
NOV -9 1998

COMMITTEES:
BANKS AND BANKING (CHAIR)
CRIMINAL JUSTICE
EDUCATION, ARTS AND HUMANITIES
HOUSING AND URBAN DEVELOPMENT
JUDICIARY
PUBLIC SAFETY (VICE-CHAIR)
PUBLIC SERVICE

*November 4, 1998*

*Mr. Robert Sievert*
*CTPS*
*State Transportation Building*
*Ten Park Plaza*
*Boston, MA 02116-3968*

*Dear Mr. Sievert:*

*This letter serves as my response to the Draft University Avenue/I-95/I-93 Regional Traffic Study prepared by the Central Transportation Planning Staff.*

*As you are aware, this study was initiated in 1996 in response to local and regional traffic concerns. The study was requested by the Three Rivers Interlocal Council, the Neponset Valley Chamber of Commerce, and the towns of Norwood, Westwood, Canton, and Dedham. The purpose of the study was to identify area traffic problems and devise alternative roadway improvements.*

*While the study was commissioned to generally examine local and regional traffic patterns, much consideration was given by CTPS to the impending construction of the new Route 128 Intermodal facility. In fact, during the course of this study the new Route 128 Intermodal facility was given much consideration when analysis of traffic congestion, safety, neighborhood and environmental impact, and economic development were performed by CTPS.*

*The recommendations of CTPS include cost estimates and schedules of local and regional roadway projects which will substantially improve traffic in the I-95/I-93 region and at the same time protect the local environment. These recommendations are responsible and reasonable*

*and reflect a commitment by state and local officials, as well as the business community, to improve the quality of life in the region.*

*I would like to thank all of the individuals who participated in this process over the last few years and reiterate my support for the recommendations of this CTPS study.*

*Sincerely,*

Marian Walsh.

*MARIAN WALSH*

*MW/jh*

TOWN OF NORWOOD

GENERAL MANAGER
JOHN J. CARROLL
(781) 762-1240

November 4, 1998

Robert Sievert
Central Transportation Planning Staff
State Transportation Building
Ten Park Plaza, Suite 2150
Boston, MA 02116-3968

Dear Mr. Sievert:

The Board of Selectmen has asked me to pass along their comments regarding the "University Ave/I-95/I-93 Regional Traffic Study".

First and foremost: There will be no widening of Neponset Street from I-95 to Route One (Pendergast Circle)! ! ! !

Please remove this alternative from any consideration as a means of improving traffic in the region.

It will not happen!

Second: While the Board does support a grade separation at Route One and University Ave./Everett St., the members are extremely concerned about the impact on the commercial enterprises at all four corners. Should the permanent impacts be shown to put any one, or all, of these enterprises out of business, the Board would withdraw its support for this project.

Very truly yours,

John J. Carroll

cc: Board of Selectmen
Ken Miller, Mass Highway-Planning
Steve Costello
James McNulty
David Mahn
Senator Walsh
Representative Rogers

JJC:bak

566 Washington Street, P.O. Box 40, Norwood, MA 02062-0040
Fax No. (781) 762-9180/VOICE/TTY - Use Phone Relay

**CTPS** CENTRAL TRANSPORTATION PLANNING STAFF

Technical staff of the Boston Metropolitan Planning Organization

# [RESPONSE]

23 November, 1998

Mr. John Carroll
General Manager
Town of Norwood
566 Washington Street
P.O. Box 40
Norwood, MA 02062-0040

Dear Mr. Carroll:

**Re: Your letter regarding potential roadway widening of Neponset Street in Norwood**

I would like to thank you for your letter which you sent stating your and the Board of Selectmen's understandable concerns regarding any potential widening of Neponset Street in Norwood, between I-95 and Route 1.

In response, I am attaching a copy of the letter which was sent to Mr. Jim Merageas of the District 9 Concerned Residents Committee, Corp. Should you have any further questions pertaining to this matter, or regarding the overall study in general, please feel free to call me at (617) 973-7138. Should I be unavailable, you may contact Efi Pagitsas, Manager of CTPS' Traffic Analysis and Design group at (617) 973-7106.

Thank you for your response.

Sincerely,

Robert Sievert

Robert Sievert
Project Manager

RES/res

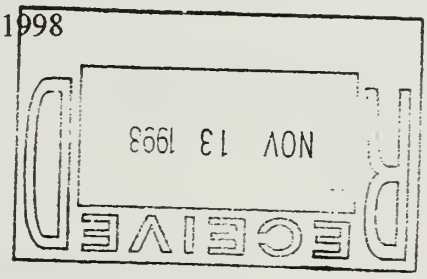
cc: Ken Miller, BTP&D, MassHighway

State Transportation Building • Ten Park Plaza, Suite 2150 • Boston, MA 02116-3968 • (617) 973-7100 • Fax (617) 973-8855 • TTY (617) 973-7089 • ctps@ctps.org

# District 9 Concerned Residents Committee, Corp.

92 Hazelwood Drive - Norwood, MA 02062

November 11, 1998




Central Transportation Planning Staff
State Transportation Building
Ten Park Plaza
Suite 2150
Boston, MA 02116

Re: CTPS proposal to widen Neponset Street between I-95 and Nahatan Street Rotary

Dear Staff Members:

It has come to our attention that the Central Transportation Planning Staff of the Boston Metropolitan Planning Organization is proposing to **WIDEN** Neponset Street between I-95 and the Nahatan Street Rotary. The stated purpose of this proposal is to "attract additional traffic to Neponset Street west of I-95 and Route 1". Since the report we have is missing page 2C which apparently shows how the road would be expanded, we are not exactly sure what the CTPS has in mind, but we could probably make a pretty good guess. Regardless of the actual plan, the "attracting additional traffic ....." statement is disturbing enough.

We are a committee of several residents of District 9 in Norwood. The section of Neponset Street that you are proposing to widen runs right through our district. As president of our committee and long time resident of District 9 in Norwood, I can state with absolute certainty that this proposal is strongly opposed by residents of this community. This is a long smoldering issue that many residents have always feared, but have also sworn they would fight with every ounce of energy they have. Also, whenever this issue came up in the past the residents of the district were assured by our Board of Selectmen that it would "never happen". We believe that you will be receiving comments from them which express the same opposition to this project.

Last year Mass Highway proposed making the Nahatan Street Rotary into a bridge with several traffic lights. The proposal died because of strong opposition from the community. One of the major concerns of the residents was that we presumed once the bridge was built, the widening of Neponset Street was soon to follow. In that case, the assumption that Neponset Street was going to be widened created a wave of opposition. I have already received a number of calls about this actual proposal to widen the street. I have been assured that the opposition to the Nahatan Bridge was nothing compared to what would happen if this proposal were advanced. I can't imagine a more contentious situation than what the Public Hearing was on the Nahatan Bridge, but I can assure you "you ain't seen nothing yet".

We thank you for your solicitation of comments and we sincerely hope that you withdraw this proposal from consideration. We want to keep Neponset Street a residential street; we do not wish it to become a mini highway.

Sincerely,

Jim Merageas
Acting President

cc: District 9 Board Members

**CTPS** CENTRAL TRANSPORTATION PLANNING STAFF

Technical staff of the Boston Metropolitan Planning Organization

# [RESPONSE]

23 November, 1998

Mr. Jim Merageas
Acting President
District 9 Concerned Residents Committee, Corp.
92 Hazelwood Drive
Norwood, MA 02062

Dear Mr. Merageas:

**Re: Your letter regarding potential roadway widening of Neponset Street in Norwood**

First of all, I would like to thank you for your letter which you sent stating your and District 9's understandable concerns regarding any potential widening of Neponset Street in Norwood, between I-95 and Route 1.

Second, I wish to state up front that ***in no way whatsoever was there in the past, or is there currently, a recommendation by CTPS to widen Neponset Street***, as a result of the just completed "University Avenue/I-95/I-93 Regional Traffic Study."

In fact, our analysis confirmed that a *potential* expansion of Neponset Street (from two to four travel lanes), would cause substantial increases in AM and PM peak hour traffic in both the eastbound and westbound directions. For this very reason, this proposed improvement alternative was *rejected* due to its severe impacts on the neighborhood along Neponset Street.

Finally, it should be added that when the study began nearly two years ago, CTPS solicited input from the Task Force[1] with respect to both existing traffic problems as well as potential roadway improvements throughout the study area. As with virtually all of the improvements proposed[2], the widening of Neponset Street was simply included to see what the merits, if any, would be if such a roadway expansion were to take place. As mentioned above, however, the increased traffic volumes outweighed any benefits which widening of the roadway may yield in reducing the long queues which currently exist during the peak periods.

---

[1]The Task Force was made up of community officials from Canton, Dedham, Norwood, and Westwood; representatives from other concerned groups (Three Rivers Interlocal Council, Neponset Valley Chamber of Commerce, Dedham-Westwood Water District, State Senator Marian Walsh, State Representative Maryanne Lewis, among others); as well as State and Regional entities (MassHighway, MBTA, AMTRAK, MEPA, CTPS).

[2]The proposed widening of Neponset Street was a local, not a State or CTPS, suggestion. However, even at that time there was discussion that the proposal probably would never be accepted by the neighborhood, but for the sake of confirming its probable impacts, the measure was included in the analysis.

Should you have any questions pertaining to this matter, or regarding the modelling process or the overall study in general, please feel free to call me at (617) 973-7138. Should I be unavailable, you may contact Efi Pagitsas, Manager of CTPS' Traffic Analysis and Design group at (617) 973-7106.

Thank you for your response.

Sincerely,

Robert Sievert

Robert Sievert
Project Manager

RES/res

cc: Ken Miller, BTP&D, MassHighway
John Carroll, Norwood

17 Nov 1998

TO: Robert Sievert

From: GEORGE W. VLACHOS Town Meeting member District 9
262 Ridgewood Dr.
Norwood, MA 02062
Tel. (781) 769 0052

Subject: Response to your letter
RE: Solicitation for Comments on Draft Report: "University Avenue I-95/I-93 Regional Traffic Study"

Good luck on (1-C).

On (2-9) the widening of Neponset St from I-95 to the Pendergast Circle Rotary we know that the area involved is already saturated with vehicular traffic and any shifting of more traffic by widening the Street would increase the probably of disasters.

The disasters would include:

The inability of medical, fire and police vehicles to respond to emergencies when that stretch of road is entirely blocked with vehicles stopped because of the present heavy load of traffic.

You would be increasing the danger of people dying because emergency vehicles from Norwood's police and fire station on Nahatan St could not reach citizens in time to save their lives.

The widening of Neponset St, a country lane, would be a blot on your record and we feel you have more sense than to increase a dangerous area and kill people.

George W. Hachox

P.S. please send me a copy of (2-c)

RECEIVED NOV 30 1988

TEL.: (781) 575-6575
FAX: (781) 821-2935

TOWN PLANNER
ROGER A. NICHOLAS
AICP; ASLA

# Town of Canton, Massachusetts

PLANNING DEPARTMENT
UPPER MEMORIAL HALL
801 WASHINGTON STREET
CANTON, MA 02021

**Mr. Ken Miller**
**Technical Director**
**Bureau of Transportation Planning and Development**
**Ten Park Plaza, Room 4150**
**Boston, MA. 02116**

**Re: Comment Letter for the CTPS Draft Report "University Avenue/I-95/I-93 Regional Traffic Study"**

**Dear Mr. Miller:**

**I would like to extend my appreciation to you and your staff for their efforts and cooperation throughout the development of the "University Avenue/I-95/I-93 Regional Traffic Study". Your staff was able to effectively communicate the importance of the selected transportation improvements to elected officials and citizens. The public planning process allowed elected officials and citizens to make informed decisions and recommendations. As a result, the Town's of Canton, Dedham, Norwood and Westwood now have a viable transportation improvement plan for the area.**

**I look forward to working with you in the future.**

**Sincerely,**

Roger A. Nicholas

**Roger A. Nicholas, AICP, ASLA**
**Canton Town Planner**

NEPONSET RIVER WATERSHED ASSOCIATION

2438 Washington Street • Canton, MA 02021
voice 781/ 575-0354 • fax 781/ 575-9971

December 18, 1998

Robert Sievert
CTPS
10 Park Plaza, STE 2150
Boston, MA 02116

Dear Robert,

I am writing to comment on the draft University Avenue / I-95 / I-93 Regional Traffic Study. As you may know, the Neponset River Watershed Association (NepRWA) has been, and continues to be, deeply concerned about the impact projects such as the add-a-lane would have on wetlands, water quality, habitat fragmentation and groundwater recharge to the Fowl Meadow Area of Critical Environmental Concern.

While the CTPS project was initiated to address existing traffic and safety problems in the corridor, the report seems to go beyond this mandate to reflect local desires for increased development opportunities in the ACEC. NepRWA is concerned that in the end, the project's original purpose --to alleviate traffic congestion and safety problems -- could remain unresolved due to the additional development the proposed actions will encourage. Additionally, we were unable to find any analysis of traffic level-of-service for future conditions. It is also very likely that the future developments will generate dramatic "secondary" environmental impacts as a result of the project.

Through the MEPA process and other venues we have consistently called for a comprehensive evaluation of these secondary environmental impacts, which NepRWA believes are much more significant than the direct impacts associated with any individual project. No such evaluation has been conducted or seems to be forthcoming.

The CTPS report is excellent in that it takes a reasonably comprehensive regional approach to the problem. NepRWA would like to work with interested parties to ensure that a similarly comprehensive regional approach is taken to the environmental review process.

NepRWA is particularly concerned that the environmental review for the construction of ramps between Dedham Street and I-95 have been segmented from a larger environmental review. The proposed changes and widening on Dedham Street, the relationship between this project and environmentally damaging proposals such as the East West Road, and the inevitable pressure tc develop a full interchange at Dedham Street pose some of the most dramatic direct environmental impacts, as well as serious secondary impacts through changes to the overall development potential along Dedham Street.

The overall reconfiguration of the I-95/I-93 interchange could, if sensitively designed, provide some modest environmental benefits, by tightening up the overall interchange footprint. However, NepRWA is concerned with the report's suggestion that these be "high speed ramps." High speeds would require an excessive highway scale and would generate unnecessary environmental impacts. The I-95/128 interchange ramps in Peabody are one example of such over design. Prevention of excessive speed is also critical in minimizing the possibility of an accident involving a tank truck near the Dedham-Westwood well fields.

The CTPS report is helpful in that it advances a variety of means to reduce "turbulence" in overall traffic flow through the corridor, thus offering the potential for reduced congestion

without the direct environmental impacts associated with wholesale highway expansion. As someone who commutes daily on 128, the notion that turbulence, not volume, is the source of traffic problems in the corridor is quite compelling.

The one element of the overall changes to the highway scheme that gives NepRWA the greatest concern is the add-a-lane project. It is NepRWA's belief that this solution has not been adequately demonstrated, it will cause maximum environmental impacts, and it will not achieve the desired traffic improvements. Much of this concern is rooted in the failure of the add-a-lane project to recognize the strong AM-PM traffic characteristics of the corridor. NepRWA would strongly prefer that CTPS proposals to reduce traffic turbulence be implemented before the wholesale widening of 128 is implemented. Unfortunately, it appears that widening is currently programmed to occur first.

None of the CTPS recommendations on Traffic Management for various residential side streets appeared in the report's final recommendations. Traffic calming (i.e. speed reduction) methods should be presented for Canton Street, Route 138, Greenlodge Street, Elm Street and others.

Finally, the proposed intersection at Route 1 and Everett Street seems excessively complex, with high speeds and too much potential for wrong way travel.

In conclusion, many of the elements of the CTPS report, if thoughtfully designed, could improve safety and reduce congestion with minimal environmental impact. However, other elements of the report have the strong potential to encourage additional development in environmentally inappropriate areas, and generate additional traffic that would undermine the goals of the project. A few elements of the proposal, particularly the add-a-lane project hold out the prospect of severe environmental impacts with unclear benefits in terms of safety and congestion.

Finally, I would ask the CTPS staff to consult with the staff of EOEA's MEPA office, to develop recommendations for a comprehensive, regional environmental review project which addresses both direct and indirect impacts to the Fowl Meadow ACEC.

Sincerely,

Ian Cooke
Executive Director

# [RESPONSE]

6 January, 1999

Mr. Ian Cooke
Executive Director
Neponset River Watershed Association (NepRWA)
2438 Washington Street
Canton, MA 02021

Dear Mr. Cooke:

**Re: NepRWA's review of the CTPS Draft report *University Avenue/I-95/I-93 Regional Traffic Study***

I would like to thank you for your letter dated 18 December, 1998, in which you listed NepRWA's concerns regarding the CTPS study and the recommendations stated in it. This letter seeks to respond to your concerns.

In the second paragraph of your letter you voice some concern that the report goes beyond its mandate to address existing traffic and safety problems, and instead reflects "...local desires for increased development opportunities in the ACEC." In the study's original scope of work it was stated that "the primary focus of the study will be the improvement of traffic not on Route 128, but rather on the local streets and access roads which connect the employment and residential areas throughout the corridor." This focus was maintained during the course of the study, and to the extent that local development opportunities may ultimately be improved as a result of the implementation of the recommended roadway improvements, it is a benefit to the local communities. It is also understood that increased economic development generally is associated with increases in vehicular traffic, but any final decisions with respect to the magnitude of permitted development rests with each local community.

The sixth paragraph shows concern that an improved I-95/I-93 interchange would consist of "high speed ramps." This interchange, originally intended as a full cloverleaf with I-95 continuing straight towards Boston, has for many years performed as a substandard T-shaped interchange. The improved design would include direct ramps, with appropriate design speeds between two interstate facilities, akin to the I-93/Route 24 interchange a few miles to the east. However, unlike the I-93/Route 24 interchange, the I-95/I-93 interchange would not have any left-side ramps whatsoever.

The reference to traffic management techniques (ninth paragraph) which had been suggested for Canton Street arose from local residents' concerns about potential "cut-through" traffic once the ramp between Dedham Street and I-95 southbound is implemented. This

information was contained in an appendix to the report, and was not a recommendation since there was no determination that current or future traffic conditions would warrant such measures. At any rate, CTPS' and/or MassHighway's roles would only be advisory since Canton Street is a local street, and is subject to local (Westwood) control.

Finally, in reference to your request for "...a comprehensive, regional environmental review project which addresses both direct and indirect impacts to the Fowl Meadow ACEC," it should be noted that environmental review will very likely be required by MEPA for all roadway improvements recommended in the preferred alternative. The one short range improvement recommended, the new ramp between Dedham Street and I-95 southbound, has been discussed in detail in the recently submitted Route 128 Intermodal Facility Final EIR (by the MBTA, November, 1998). Additionally, MEPA was represented and played an active role at virtually all Task Force meetings during the course of the study.

Thank you again for your review and response to the Draft report. All comments will be included in the final report, to be issued sometime early in 1999. Should you have any additional comments or questions pertaining to the study, please feel free to call me at (617) 973-7138. Should I be unavailable, you may contact Efi Pagitsas. Manager of CTPS' Traffic Analysis and Design group at (617) 973-7106.

Sincerely,

Robert Sievert

Robert Sievert
Project Manager

RES/res

cc: Ken Miller, BTP&D, MassHighway

Three Rivers Interlocal Council

c/o Metropolitan Area Planning Council
60 Temple Place, Boston, MA 02111
617•451-2770

Robert Seivert
CTPS
State Transportation Building
Ten Park Plaza, Suite 2150
Boston, MA 02116-3968

December 22, 1998

Re: "University Avenue/I-95/I-93 Regional Traffic Study

Dear Mr. Seivert;

The above referenced CTPS study was triggered by a request received from the Three Rivers Interlocal Council (TRIC), three of the abutting towns, and the Neponset Valley Chamber of Commerce. It is described as a study to assess problems and to test traffic circulation improvement alternatives in the area under study. It should be noted that the study parallels the preparation of the Final EIR for the Route 128 Station Intermodal Facility. It also assumes the implementation of the Route 128 "Add-A-Lane" project between Wellesley and Randolph.

The TRIC notes that while there is general acknowledgment of the chronic vehicular traffic congestion in the area which may or may not be significantly alleviated by "Add-a-Lane", there needs to be more attention given to local traffic needs in the area.

To receive further Federal and State funds, the MAPC policy requires that projects receive priority only if they conform to a Concentrated Development Center model. This requires a plan for providing more housing, commercial facilities, and a circulation system that is adequate for such future development. Traffic data gathered is entirely based on vehicular traffic meeting interstate requirements since there is little else in existence in the area. Under a plan that simply extends these conditions or "trends" there is little likelihood of future use of pedestrian facilities, bicycling and, most important, local minibus service in and around this intensely developing subregion.

Specific comments on this document relate to Table 3.1-1, listing recommendations for committed, short- and long-term improvements. Item #11, "Discontinue Greenlodge Street

between ramp and Elm Street", is not agreeable to the Town of Canton. TRIC recognizes this as a local issue, and feels it is important for residents of Canton to continue to have convenient access to the MBTA station. This applies not only to Greenlodge Street and Elm Street but also to Royall Street (north of 128/93) where present and planned industrial development in Canton requires local road access across Route 128/93. Such access will avoid the circuitous and already overburdened intersections at Royall Street /Route 138/93. Innovative TDM should be developed which will provide access to this area for feeder buses, pedestrians and bicyclists without diverting through SOV's. Also Item #17, "Provide new ramp from I-95 Northbound to Dedham Street; widen Dedham Street over I-95; add signal if necessary; channelize/improve Dedham St. as needed." TRIC members feel this is an important improvement that should be considered a high priority. The communities are concerned that the new ramp from I-95 Southbound will function far less effectively without the ramp from I-95 Northbound.

Therefore, it the opinion of TRIC that there should be further study of means of bringing local traffic -- including walking and bicycling -- as well as minibuses in and out of the station area and the adjacent commercial and industrial areas. This should include a means of connecting Royal St. in Canton directly to the station area by crossing the Interstates, using streets designed to a 25-mph design speed. This design would assume that future development would not be entirely dependent on single-occupancy vehicles. *Use of land use planning input is recommended.*

It is therefore the request of TRIC that the draft report be supplemented with a study of this nature *include the use of land use planners* and the recommendations of the report be suitably modified.

Sincerely;

George Bailey
Chairman - TRIC

# [RESPONSE]

8 January, 1999

Mr. George Bailey
Chairman
Three Rivers Interlocal Council (TRIC)
c/o Metropolitan Area Planning Council
60 Temple Place
Boston, MA 02111

Dear Mr. Bailey:

**Re: TRIC's review of the CTPS Draft report *University Avenue/I-95/I-93 Regional Traffic Study***

I would like to thank you for your letter dated 22 December, 1998, in which you listed TRIC's concerns regarding the CTPS study and the recommendations stated in it. This letter seeks to respond to your concerns.

In the second paragraph of your letter you state that "...there needs to be more attention given to local traffic needs in the area." As you may recall, in the early stages of the study, CTPS solicited the project Task Force for information about traffic concerns and problems throughout each of the four communities in the study area (Canton, Dedham, Norwood, and Westwood). There were TRIC representatives present at virtually every Task Force meeting, and sufficient opportunity existed for suggesting specific locations which needed to be studied further.

Through this process, many local roadways and intersections were included in the study in addition to the major highway facilities. Traffic data was collected, level-of-service (LOS) analyses were performed, and improvement recommendations were made for local roadways such as University Avenue, Dedham Street, Route 138 at Royall Street, Route 138 at Washington Street, Route 138 at Randolph Street, Route 1 at Everett Street, and Blue Hill Drive at the Route 128 southbound ramps. Traffic management techniques were suggested for Canton Street. Recommendations to improve the I-95/I-93 interchange and to add access between Dedham Street and I-95 were designed not only to improve safety and traffic flow on the interstate facilities, but also to make the interstates more attractive, thereby drawing traffic away from local neighborhoods and facilities currently used by much regional traffic.

The overall preferred alternative which was developed from the study was endorsed by the Task Force, and meets the intent of the study, as stated in the original work scope: "The primary focus of the study will be the improvement of traffic not on Route 128, but rather on the

local streets and access roads which connect the employment and residential areas throughout the corridor."

In the fourth paragraph you state that "Item #11. 'Discontinue Greenlodge Street between [the] ramp and Elm Street', is not agreeable to the Town of Canton." Throughout the study, there was no consensus from either Canton or Westwood whether the Greenlodge Street Bridge should be rebuilt and thereby re-create a previously disconnected travel route. Many residents in the immediate neighborhoods opposed the re-connection. while town departments such as fire and police voiced support, since it would improve access and reduce response time. The recommended improvement is a new ramp from the University Avenue at Blue Hill Drive intersection, across a rebuilt Greenlodge Street Bridge. connecting directly to the Route 128 southbound (I-93 northbound) facility, thereby disconnecting the Elm Street/Greenlodge Street neighborhood from the expanded station and parking garage area for vehicular traffic. Whether a connection could ultimately remain between the neighborhood and the station area for emergency vehicles, bicycles and/or pedestrians only, is an issue which the Town of Canton may wish to pursue with MassHighway.

In the fourth, fifth, and sixth paragraphs there are references to improving access to and from the expanded station and garage area via TDM, new facilities across Route 128, and land use planning. Improving local access through TDM and land use planning are issues which involve local town officials and employers in the vicinity of the affected area, and were outside the scope of the study. New facilities which would connect the Royall Street area with the station area were analyzed in the study and found to be infeasible and/or incompatible with the recommended preferred alternative. However, a local connection across Route 128 between Royall Street and the Greenlodge Street/station area, may receive further scrutiny by MassHighway once the four I-95/I-93 interchange ramps and the University Avenue-to-I-93 northbound on-ramp have been designed.

Thank you again for your review and response to the Draft report. All comments will be included in the final report, to be issued sometime early in 1999. Should you have any additional comments or questions pertaining to the study, please feel free to call me at (617) 973-7138. Should I be unavailable, you may contact Efi Pagitsas. Manager of CTPS' Traffic Analysis and Design group at (617) 973-7106.

Sincerely,

Robert Sievert

Robert Sievert
Project Manager

RES/res

cc: Ken Miller, BTP&D, MassHighway